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Multichannel NEWS International

APRIL 2000

THE WORLD'S SOURCE FOR TV AND TELECOM ANALYSIS

WHAT'S INSIDE

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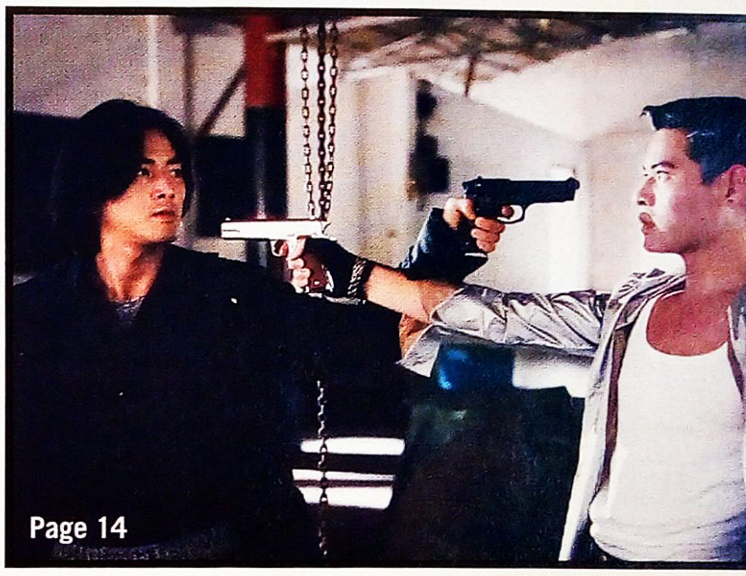

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WORLD **WATCH**

Tuesday in Belgium

BY JANET STILSON

Eight years ago, in December 1999, I went to a conference in Hong Kong, where Michael Bloomberg made a statement that keeps coming back to me. The CEO of Bloomberg L.P. predicted that in two years time, the word "Internet" will be considered passé, because consumers won't be that aware of how entertainment and information is received in their homes. Delivery will be "seamless."

While it's easy for me to wrap my mind around that, it still amazes me, because right now, it's impossible to go a week without an announcement from either Microsoft Corp. or News Corp. about the sealing of some globetrotting Internet deal. During one recent week it was Malaysia's MEASAT Broadcast Network Systems for Microsoft, and India chats for News Corp. chairman Rupert Murdoch. The following week it was Teléfonos de México S.A. for Microsoft. Kind of a Year-2000 spin on the *If It's Tuesday, This Must be Belgium* concept.

We're obviously witnessing a window of very limited time when mega-companies are playing beat the clock to make sure their futures are secure with alliances and acquisitions that marry content and the Internet. But at the same time that this frenzy takes place and the shiny term "Internet" becomes rusted, we are still in the infancy of understanding how to conduct Internet-related business.

As the term "Internet" becomes outdated, we still are in the infancy of understanding how to conduct Internet-related business.

An Internet conference presented by the National Academy of Television Arts and Sciences in New York last month seemed to raise more questions than it answered. Effi Mueller, a vice president at Germany's ZDF Enterprises, came out of one session noting that there are still big questions about how to sell TV and Internet rights to a programmer in a particular market, when the Internet is borderless. How do you avoid copyright issues with other rights holders? My "One on One" department interview with Paramount Pictures' president of international pay TV Jack Waterman, on page 54, suggests one possible answer. Stephen Tapp, vice president and general manager of Canada's Chum International suggests a couple of others. Among them: Make the Internet portion of deals language-specific, rather than territory-specific.

The questions hardly end there. As Waterman reminds, there are huge questions about piracy on the Web. And as Showtime Networks executive vice president Mark Greenberg noted at the conference, the rules of thumb concerning what kinds of events will work in the pay-per-view or video-on-demand windows for TV won't necessarily hold true for the Web. Sure, a Mike Tyson fight will sell, but the vast amount of free content available over the Web right now could cause mid-range pay events to utterly flop. He points to the difficulties that House of Blues has faced in convincing people to pay for events on its Web site. Who needs it when so much other stuff is free?

Yes, Virginia, we're in a can of worms. It will certainly give a sort of back-to-school feeling to this month's MIP TV program market in Cannes and the NAB convention in Las Vegas — let alone *Multichannel News International's* own fabulous International Pay TV Summit next month — as we all crawl up the learning curve together.

Janet Stilson

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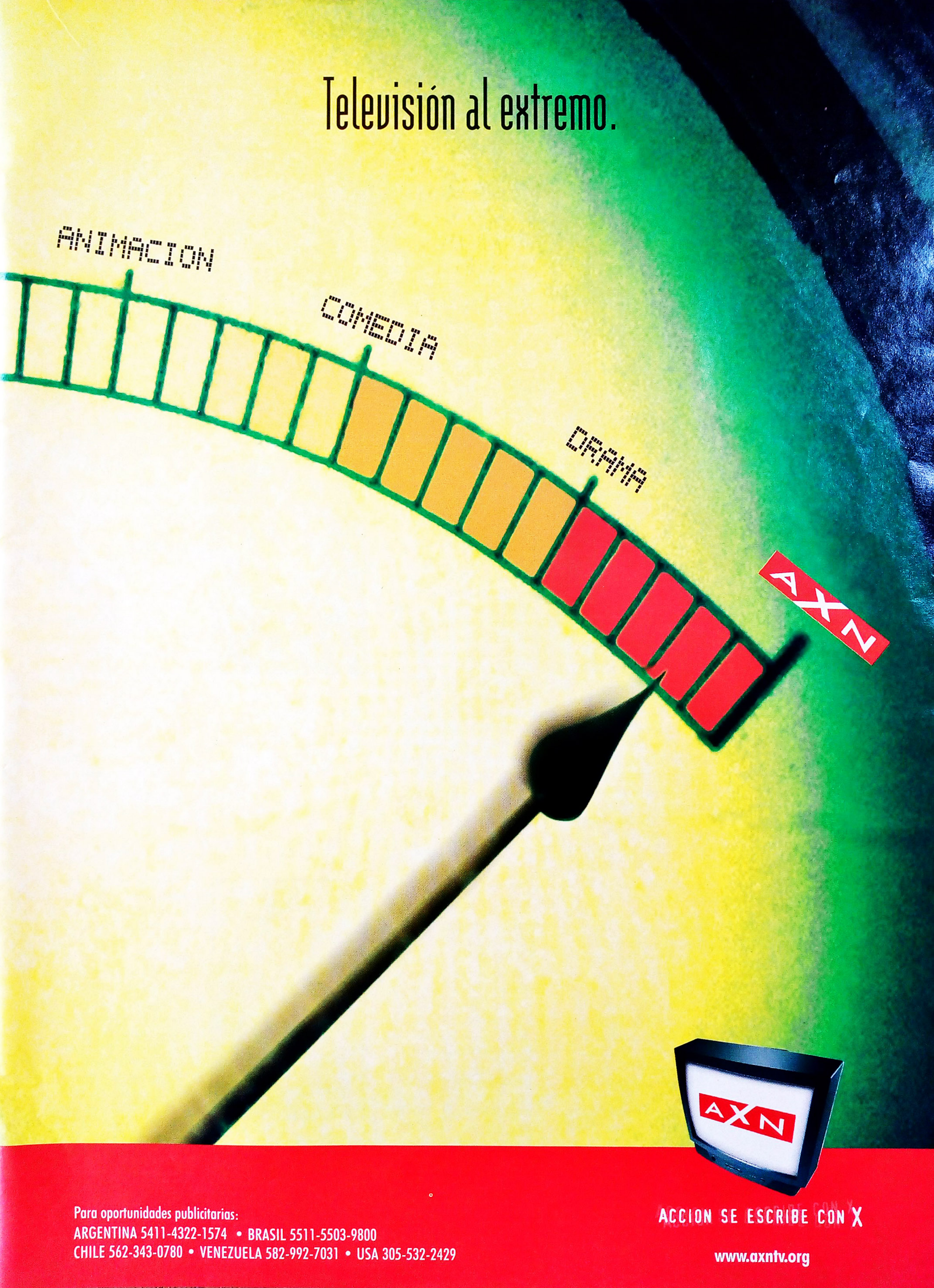
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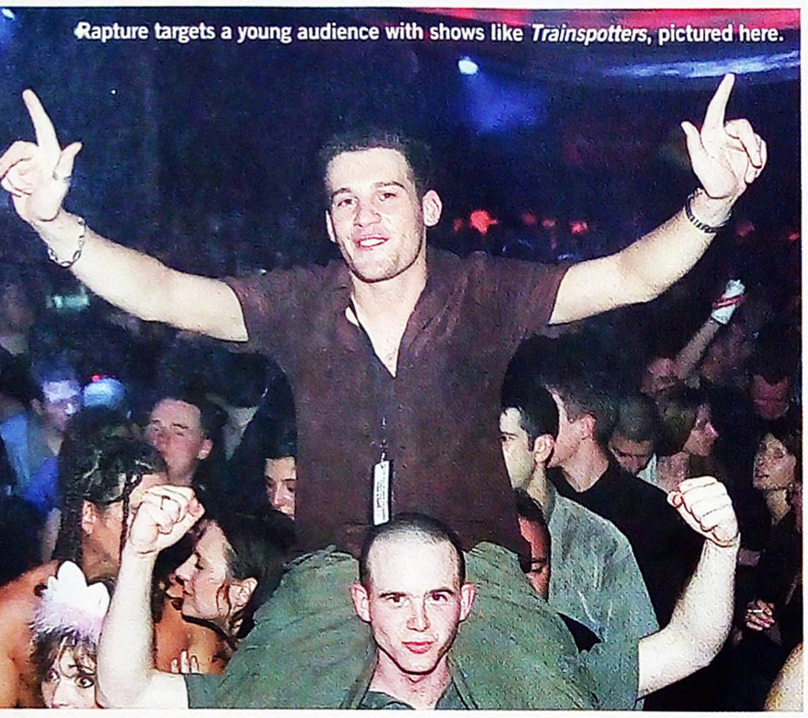

Rapture targets a young audience with shows like *Trainspotters*, pictured here.

A Passion for Risk

LONDON

BY ELENA BOWES

Six years ago, Adam Stanhope was at the top of his career. In the competitive British advertising world, the then-33-year-old Londoner was CEO of Initiative Media, the powerful media-buying arm of Interpublic Group of Cos. Inc., boasting such bigwig clients as International Business Machines Corp., Unilever plc and Virgin Atlantic Airways Ltd.

Then he was nearly killed. Stanhope, who used to drive race-cars as a hobby, explains, "I had a brand-new, open-top, open-wheel sports car. I tried to overtake seven people going into a corner, and ended up being airlifted to the general hospital. I broke arms, ribs and took the end of my finger off." He found the missing digit in his glove.

After taking some time off, Stanhope decided to channel his passion for risk by launching a youth network called Rapture Television. It's aimed at the notoriously tricky 18 to 24-year-old market. That move was a "shock to the industry," recalls Caroline McDevitt, CEO of BARB, the British audience-measurement company.

But Stanhope has an explanation for his thinking. "If you sit as a media buyer and watch multichannel TV start to happen, you think, 'Multichannel TV — more choice for the consumer, breakdown the ITV [private-broadcast] monopoly, fresh ideas, more accurate targeting," he says. "But what did we see? With the exception of [British Sky Broadcasting Group plc], a whole lot of reruns… People don't want to watch archives; they want to watch TV."

Stanhope left Initiative in 1994, bringing with him the company's broadcast director, Robert Ditcham, who now serves as Rapture's commercial director. They've positioned Rapture as a channel devoted to nightclubbing, film, travel and extreme sports. "We're about hedonism, excitement, thrill seeking," explains Stanhope. "We're the first channel in the world that I've come across that totally buys into clubbing as a culture."

It took them two years to find a backer and gain carriage. United News & Media plc, one of the United Kingdom's largest media companies, owns 76 percent of Rapture; the channel's management owns another 20 percent; and multiple system operator

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BSkyB's Dot-Com Architect

LONDON

BY CHRIS FORRESTER

This month, When British Sky Broadcasting Group plc televises the country's first interactive commercial — a spot for Unilever plc's Chicken Tonight sauce — it will provide a taste of what's on John Swingewood's new plate.

As BSkyB's recently appointed director of new media, Swingewood is in charge of transitioning the direct-to-home and programming company into a dot-com firm. And the Chicken Tonight ad — which allows viewers to migrate seamlessly from the commercial to Unilever's recipe site on BSkyB's interactive service known as Open — is just a sliver of the types of projects he is fostering.

While he's keen to deny full responsibility for what he describes as a "natural evolution of the Sky experience," there is no doubt that since Swingewood's arrival last November, the pace of change has dramatically increased.

He's certainly no stranger to BSkyB. In his previous post as director of Internet and multimedia services at British Telecommunications plc, Swingewood was on the board of Open, a partnership

SWINGEWOOD

between BSkyB, BT, HSBC Holdings plc and Matsushita Electric Industrial Co. Ltd. And there's little wonder that although he's switched employers, he keeps Open as a responsibility.

One observer refers to Swingewood as "the architect of BT's advance into online services." Besides introducing a fistful of BT-backed Internet-service providers (ISPs), he also tied up deals for BT with Yahoo! Inc. and Excite@Home Corp. "well before it was fashionable to do so," according to the source.

Swingewood says his brief is simple: expand BSkyB across all new technology platforms, including mobile phones, palmtop computers, the Internet and Open. "They are all designed to bring viewers the special Sky experience," he says.

Of course, there are a thousand and one outfits all promising to solve all our needs electronically, creating Web sites that provide everything from e-mail to elephants. But according to Patrick Kirby, senior analyst at investment bank ABN Amro N.V., BSkyB is well placed in this arena. He notes that despite hype over the Web,

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Starting Over in Venezuela

CARACAS

BY CONRAD DAHLSON

Just when it seemed like Venezuelan cable operators were becoming fewer and fatter, lo and behold, a new upstart enters. GloboCable is the name of the newcomer, which happens to be backed by a couple of media veterans: José Luis Pereira and Alberto Federico Ravel.

The duo were in business together 10 years ago, partners in Venezuela's first wireless-cable operator, Cablevisión. After three years in business, they had built up a subscriber base of 25,000, enough to attract the interest of Venezuela's media powerhouse, the Cisneros Group of Cos. The heavyweight bought Cablevisión in 1993 for an undisclosed sum, and sold it off about five years later.

PEREIRA

Ravel is GloboCable's principal shareholder, and also happens to be a founding partner at Globovisión, Venezuela's sole free-TV news channel. Pereira, who agreed to be interviewed for this story, is GloboCable's general director. He is often sketchy on details, but this much is clear: Their idea is to build a multiple system operator (MSO) covering Caracas' outlying suburbs of Guarenas and Guatire, which are industrial centers in their own right.

GloboCable has already obtained a license from the National Telecommunications Commission. The company has offices in Guarenas, and is starting to line up programming. However, it hasn't started laying cable and won't do so until after Venezuela's May 28 "mega-elections," in which voting will be held for all elected officials — from the president on down to governors and mayors — to effectively reconfirm them under the country's new constitution. Venezuelans hope the elec-

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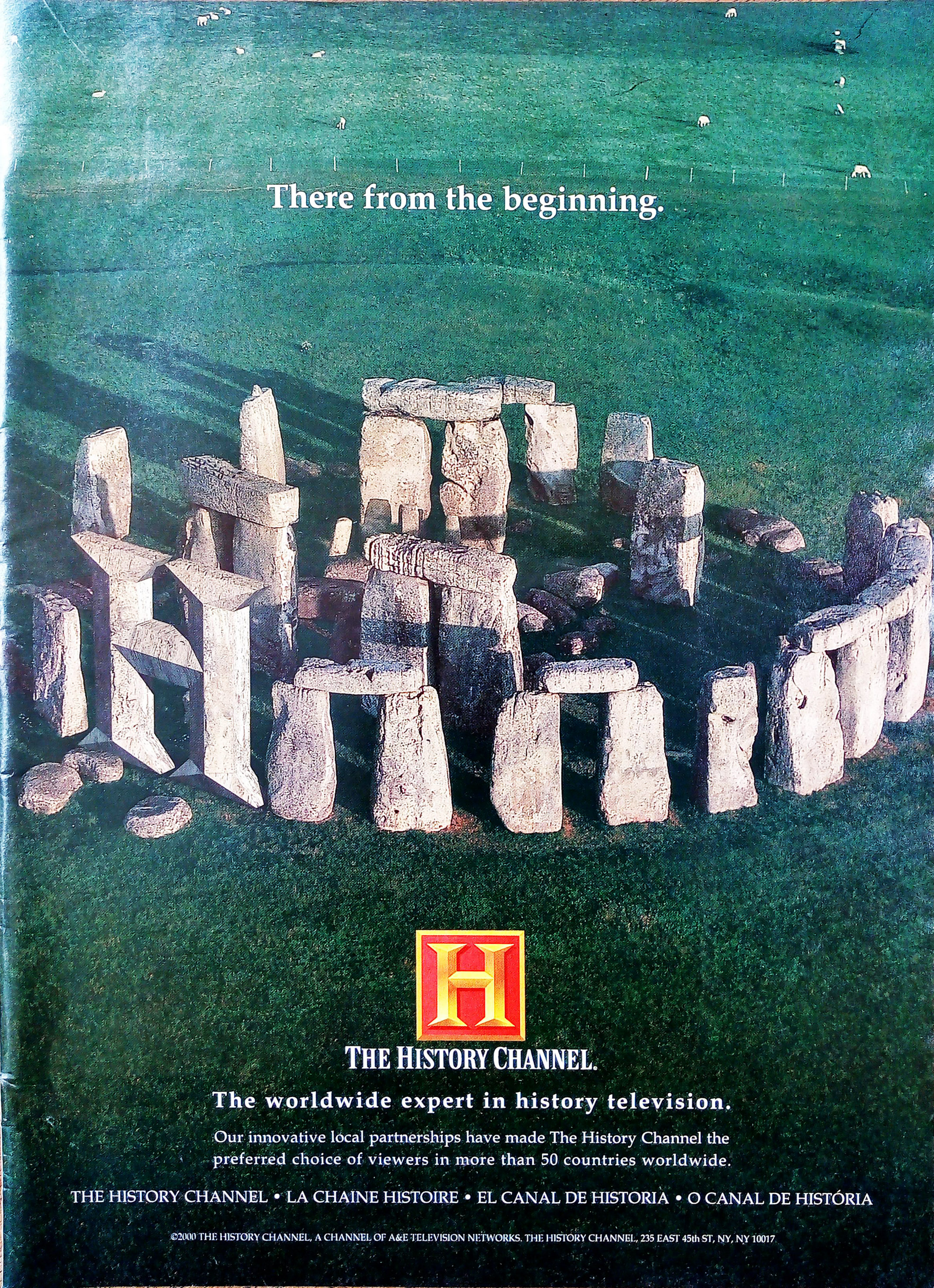

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Advertising

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Attracting E-Advertising

European Internet firms are stuffing some TV coffers

Uproar.com, top, and Leisureplanet.com are among the many Web sites advertising in traditional media.

BY WILLIAM SPAIN

When the Internet began to come into its own in the United States a half-decade ago, cable networks worried that its superior targeting capabilities would soon begin to siphon off a chunk of their advertising dollars.

As it turns out, there was no need to fret. Internet entrepreneurs with fistfuls of venture capital are pouring money into traditional media outlets, while U.S. media companies appear to be hedging their bets by either merging with, or swallowing, potential online competition. But it raises the question of whether the same advertising dynamic would develop elsewhere in the world, spurred by growth that saw the number of Internet users outside the U.S. surpass those Stateside for the first time last year.

In Europe, at least, the answer seems to be a resounding yes.

"Last year, we estimate that dotcoms spent £67 million ($US105 million), just in the U.K.," says John Owen, the London-based head of Starcom IP, the media arm of merged ad-agency holdings The Leo Group and The McManus Group. "Of that figure, 58 percent was spent just in the last quarter. And it doesn't show any signs of abating." That is more than a threefold increase from £20 million ($US31.4 million) in 1998.

While just more than half of that spending was in print, cable and broadcast TV were getting their share, attracting 28 percent of the outlays. Owen expects TV to gain a bigger piece of the spending. "I am seeing more moves onto TV. I have noted a lot of new dot-com brand spending migrating," in that direction, he says.

Owen's company buys media in Europe and the United Kingdom for a number of Web ventures. They include TheStreet.com, Sportal.com and etoys.com. With 24 percent of the population online — approximately 11 million people — the U.K. ranks sixth in Europe, in terms of percent of people online. It is behind the Scandinavian countries and Switzerland, but well ahead of its large European Community partners such as Germany and France.

Jeffrey Merrihue, Western Initiative's regional director for Europe, says his media-buying shop is seeing Web-based businesses across the board.

"It is definitely happening everywhere, but the absolute fever is in the Scandinavian countries and the U.K. It has been an explosion. We are probably getting one [new client] a day. We had to create another agency just to handle it."

Western Initiative buys for Uproar Inc. and Sun Microsystems Inc., along with about 20 start-ups, from e-commerce ventures to online gaming to financial-services companies, he says.

On the selling side, "There are now a lot of IPOs outside the U.S., and we are starting to see a lot of business creep up," notes David Levy, president of international sales and Latin America for Turner Broadcasting System Inc. In addition, "large global players, like Yahoo! Inc. and AOL Europe are going country-specific and in-language."

Turner recently inked multimillion-dollar global deals with dotcoms such as Leisureplanet.com and Healtheon/WebMD Corp., and sees continuing strength in the worldwide business. The Leisureplanet deal alone was worth more than $US30 million across various CNN properties, the pro-

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Sunny Skies Ahead For Indian Channels

BY RASHME SEHGAL

Ask Indian media consultants what the mantra is for the new-found confidence among the throng of satellite-delivered channels here, and they'll chant one word: advertising.

A mere two years ago, advertising budgets in India were on a slide, cramping the prospects for the increasing number of channels trying to make a go of it. But 1999 proved a "leap" year for advertisers. A quarter of the 49 billion rupees ($US1.06 billion) spent on television advertising was milked by satellite channels.

Sony Entertainment Television's *Hum Aakpe Hain Kountdown.* Indian cable and satellite channels are doing some counting of their own amid increased ad spending.

The ad spending on these channels rose by 25 percent last year, and is expected to increase by another 25 percent this year, according to media analysts.

"The turnaround has been advertising driven," reports Sushil Pandit, CEO of media consultancy The Hive. "Most of the Indian entertainment channels remain free-to-air, with advertising their only source of revenue. Take the case of Sony Entertainment Television, Zee TV, Sun TV, Eenadu TV and Doordarshan 1 and 2. They depend entirely on ads."

There are two factors fueling the growth: Television's overall reach is attracting advertisers in greater numbers, while many companies are launching aggressive ad campaigns.

"India is a cricket-crazy country. And the biggest advertising event last year was the Cricket World Cup, which saw [companies] fork out over 4 billion rupees ($US91 million) for ads woven around special events, celebrity endorsements and the proliferation of a whole series of new brands specially introduced for this event," says Pandit.

That advertising surge on the networks occurred while other sectors of the TV industry experienced their own growth. Sales of Indian TV programs and movies abroad reached an all-time

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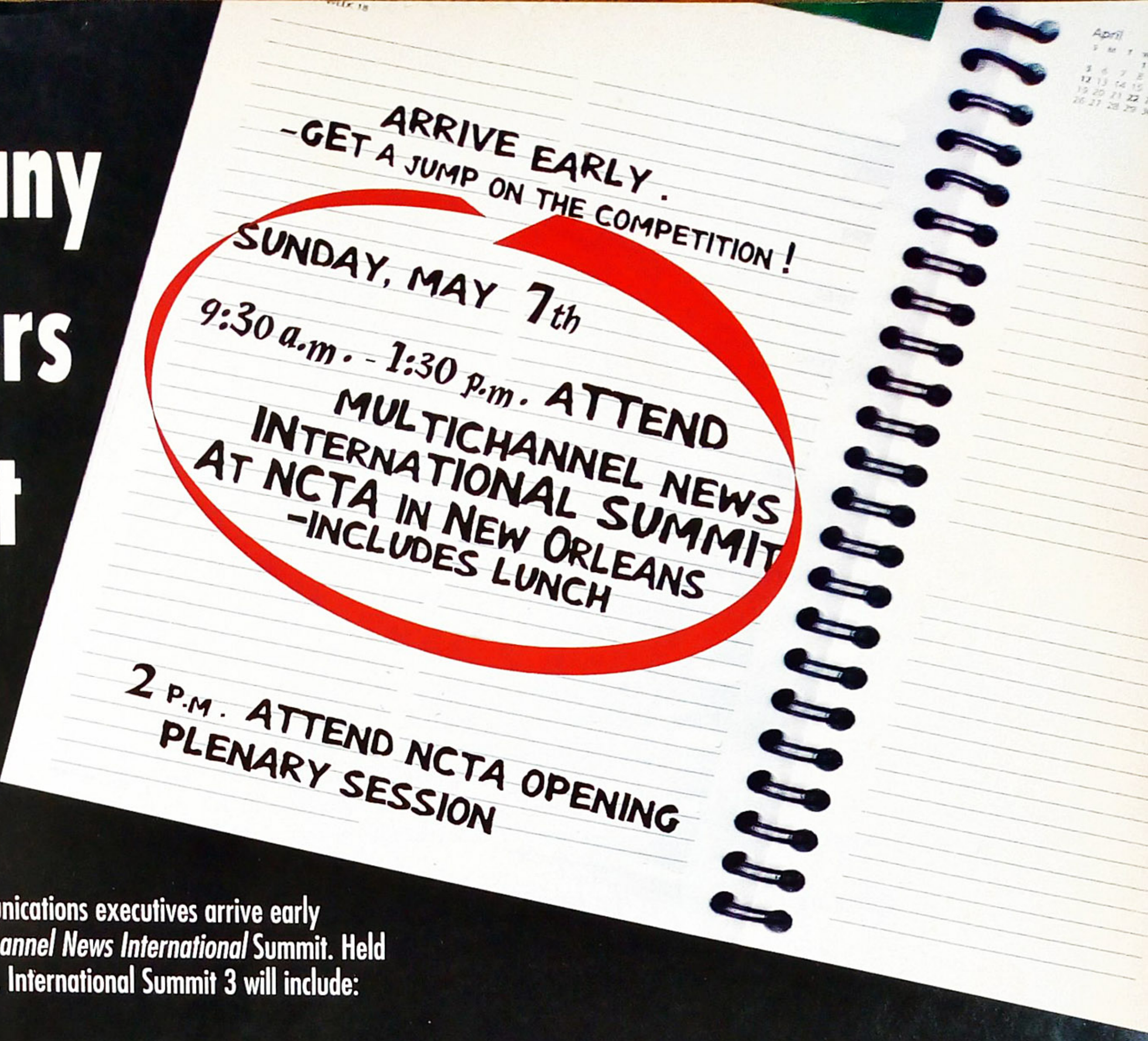
Why So Many Global Insiders Arrive Early At The NCTA



Each year, many of the industry's top communications executives arrive early at the NCTA Convention to attend the *Multichannel News International* Summit. Held right before NCTA's opening plenary session, International Summit 3 will include:

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- **New Revenue Streams**
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- **The Changing Landscape in Latin America**
  10:45 a.m. - Noon
- **Ground Breakers Editorial Awards Luncheon and Discussion**
  Noon - 1:30 p.m.

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Filling the Latino-Viewership Void

When it comes to the viewing habits of Latin American multichannel subscribers, there are lots of "blanks" that need filling in. But a new database is helping to eliminate that void. Dubbed *TGI Latina*, it is produced by Kantar Media Research.

At press time, the full database was not yet complete. But Kantar had accumulated a considerable amount of information about eight major cities in Brazil; Mexico City; Greater Santiago, Chile; Colombia; Puerto Rico, and Argentina. The following charts include information about all of those markets, with the exception of Puerto Rico.

While the Latina report itself compares the performance of individual channels, Kantar has given a "first look" here of how different program genres compare in popularity — and how the tastes of viewers in different markets vary. It is interesting to note, for example, that Chileans and Colombians show a greater likelihood than the overall average to watch movies. And Mexico City, which has a young demographic profile, shows above-average results in the Informational-Documentary and Children's categories.

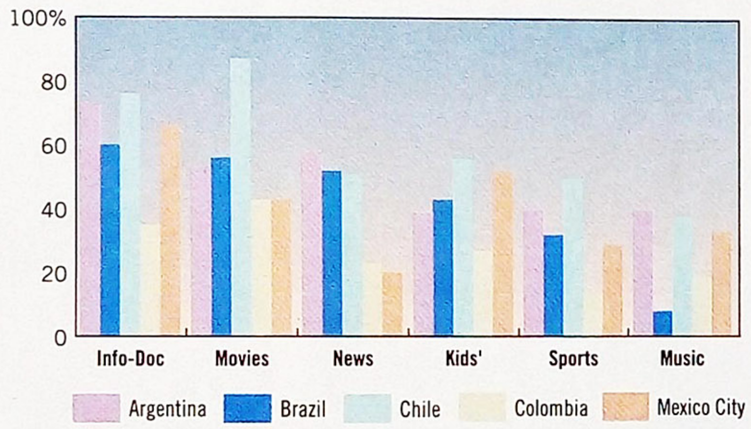
Also noteworthy is the chart tracking the percentage of viewers in the top 30 percentile of a country's socioeconomic group that are "Latin Feed" viewers. Kantar includes in that "Latin Feed" term anyone in a household receiving any form of multichannel television in Spanish or Portuguese. Kantar's vice president of marketing for Latin America, Charles Dawson, notes that in markets where "Latin Feed" penetration is high — and thus more widely viewed across all social groups — the percentage of upscale viewers is lower.

The interim results published here were derived from a sample base of 25,789 respondents, about 42 percent of the 61,450-respondent sample for the full report that will be released later this quarter. The survey was conducted between the third quarter of last year and the first quarter of 2000, depending on the market.

To obtain more information about TGI Latina, contact Michelle de Montigny at Kantar's New York offices (e-mail: MdeMontigny@kantarmedia.com, phone: 1-212-373-8898) or Charles Dawson in Miami (e-mail: cdawson@kantarmedia.com, phone: 1-305-569-0603).

Ranking the Program Genres

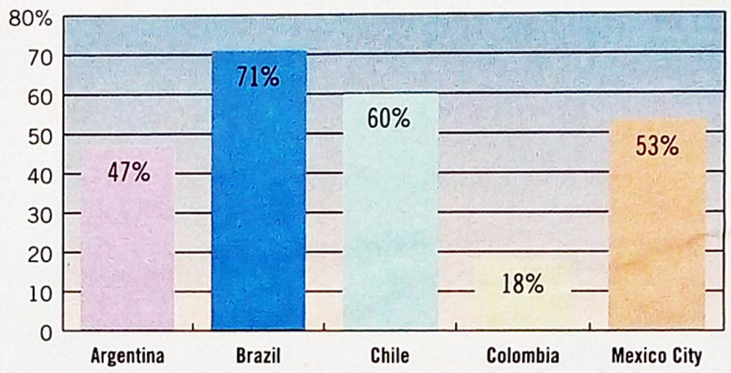
Tracking viewership by channel genre over the last seven days



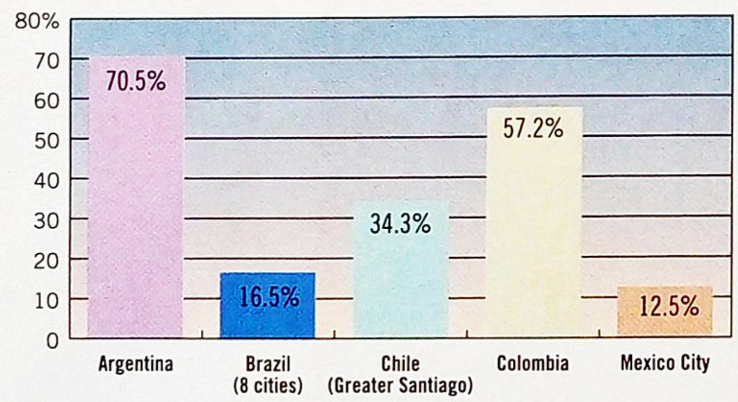
NOTE: Figures for this chart are based on individual viewers, not households.

Focusing on Upscale Viewers

Percentage of Latin-feed viewers in top 30 percent economic bracket

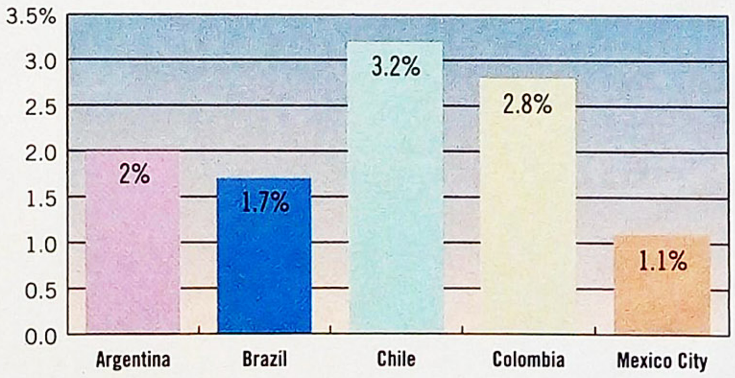


Latin-Feed Penetration



The Internet Connection

Percentage of Latin-feed viewers who used the Internet in last seven days



NOTE: Sample base includes people 12 years or older in households receiving multichannel TV in Spanish or Portuguese, by any means of delivery.

India,

Continued from Page 10

high of $US800 million, according to the Film Federation of India. What's more, production houses received orders worth $US20 million from foreign studios for animation work, industry executives say.

And since October, established programmers have debuted almost one new channel a month, with Zee adding six channels and Eenadu adding three. Those came atop the 60 satellite-delivered channels that are already up and running in the market.

Suddenly everything seemed to click. The economy picked up after the war fought in Kashmir last June; a new coalition government was sworn in last October; the stock market boomed; the information-technology industry surged ahead; and foreign direct investments rose substantially.

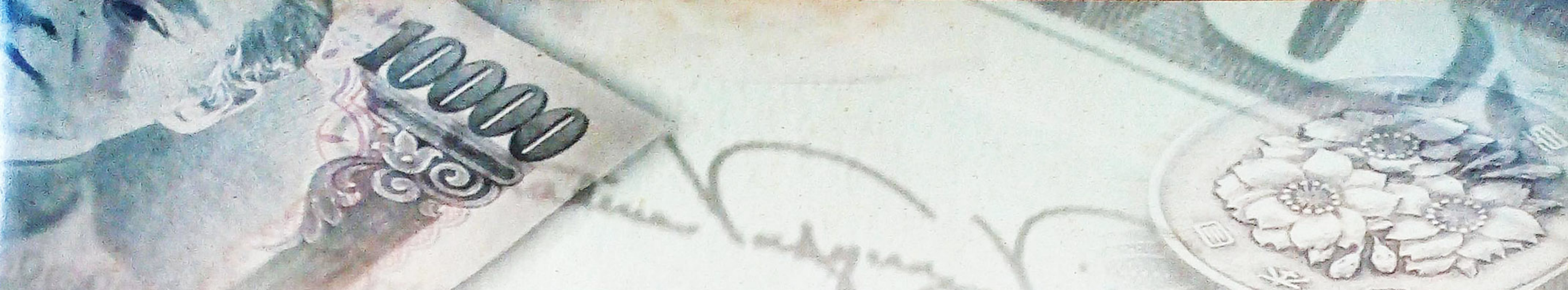
Kunal Dasgupta, CEO of Sony Entertainment Television India, maintains, "The entertainment industry today is a $US3.5 billion industry. We are poised to achieve annual [revenue] of $US100 billion within the next 10 years."

Another key factor in the boom is a stabilization of the channels' viewer bases.

"Every channel has now developed its focused target group. Star News, for example, has predominantly a male viewership that watches news coverage in detail," Anita Nayyar, associate vice president of the New Dehli office of advertising agency Ammirati Puris Lintas, says. "The TNT Cartoon Network is watched primarily by kids, while its films, as well as those of Hallmark [Entertainment Network], are [watched predominantly] by women viewers. Once ratings stabilize and advertisers know their target audiences, they can work out niche campaigns; this is exactly what is happening today."

What's more, cable penetration has grown from 20 million to 32 million homes over the last two years. Much of the increase in cable viewing has been in the Hindi heartland and in regional-language television. This increase has not been lost on advertisers, which have modified their strategies to suit the regional and rural tastes.

Narayana Swamy, executive director Indica Research, a firm specializing in consumer-marketing analysis, notes that TNT Cartoon Network is a customized Hindi channel, and that's a major factor contributing to its success. "This is so for regional networks that have an unprecedented increase in viewers," Swamy says. "With [programming] being customized for specific regions, local advertisers have now stepped in to provide more spot buys. It's an interlinked, causal chain." ■



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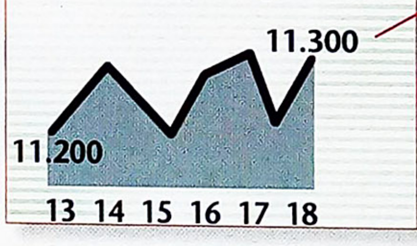

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Hong Kong Crossovers

Hong Kong is already famous for ripping down old buildings and putting up new ones. Now it's ripping down walls between industries to construct entirely new businesses.

BY VERONIQUE SAUNIER

When Pacific Century CyberWorks Ltd. made its breathtaking bid to acquire telecommunications company Cable & Wireless HKT Ltd. recently, it did more than lend further credence to the idea that relatively young Internet companies have the muscle to absorb large, established players in the world of television and telecommunications. It was also a large sign that the master plan to establish Hong Kong as a predominate hub for telecommunications and media activity in the Pacific Rim is paying off big time.

That plan, unfurled by the Hong Kong government in September 1998, laid the groundwork for an era when everyone could stick their fingers in each other's pies. Cable TV systems into telephony? No problem. Programmers moving into delivering pay TV directly to consumers? Sure, there's a way.

Less than two years after Kwong Ki-chi, the Special Administrative Region's (SAR's) secretary for information technology and broadcasting, released that blueprint, all sorts of fingers have started poking into a whole lot of pies. Sure, the same has happened to a certain extent in some of Asia's other media nerve centers. In Singapore, for example, incumbent telco Singapore Telecommunications Ltd. has diversified into interactive TV, video-on-demand and Internet services. But nowhere in the Asia-Pacific region is the cross-industry activity greater than in Hong Kong.

Ironically, the most noteworthy thumb of all, Pacific Century, nearly spurned Hong Kong altogether. The parent of six-month-old Pacific Century CyberWorks, Pacific Century Group, originally turned its back on Hong Kong and had chosen Singapore as the cradle for its first listed firm, Pacific Century Regional Developments, a property-development and insurance company. Now, CyberWorks is not only acquiring Hong Kong's dominant telco, but it's also building a $HK13 billion ($US1.67 billion) research park and residential complex sponsored by the Hong Kong government.

For Pacific Century CyberWorks chairman Richard Li, the C&W HKT deal could also mean renewed ties to Star TV — the pay TV platform and programming company that he founded in Hong Kong and eventually sold to News Corp. Prior to Pacific Century CyberWorks' agreement to buy C&W HKT, the telco had allied itself with Star to create an online multimedia service in Asia.

Consider the following interrelated crossover dreams that are becoming realities for those two companies: C&W HKT is dabbling in video-on-demand with its iTV business. Star is jumping into bed with C&W HKT on multimedia. Separately, Star is marketing its channels directly to consumers in Hong Kong, bypassing the established systems operator Cable TV Communications, run by Wharf Group. And independently from that, News Corp. and SingTel recently allied themselves — initially on a bid for C&W HKT — but ultimately to explore broadband-Internet and wireless businesses throughout the Asia-Pacific region. And that plan will undoubtedly impact Star TV.

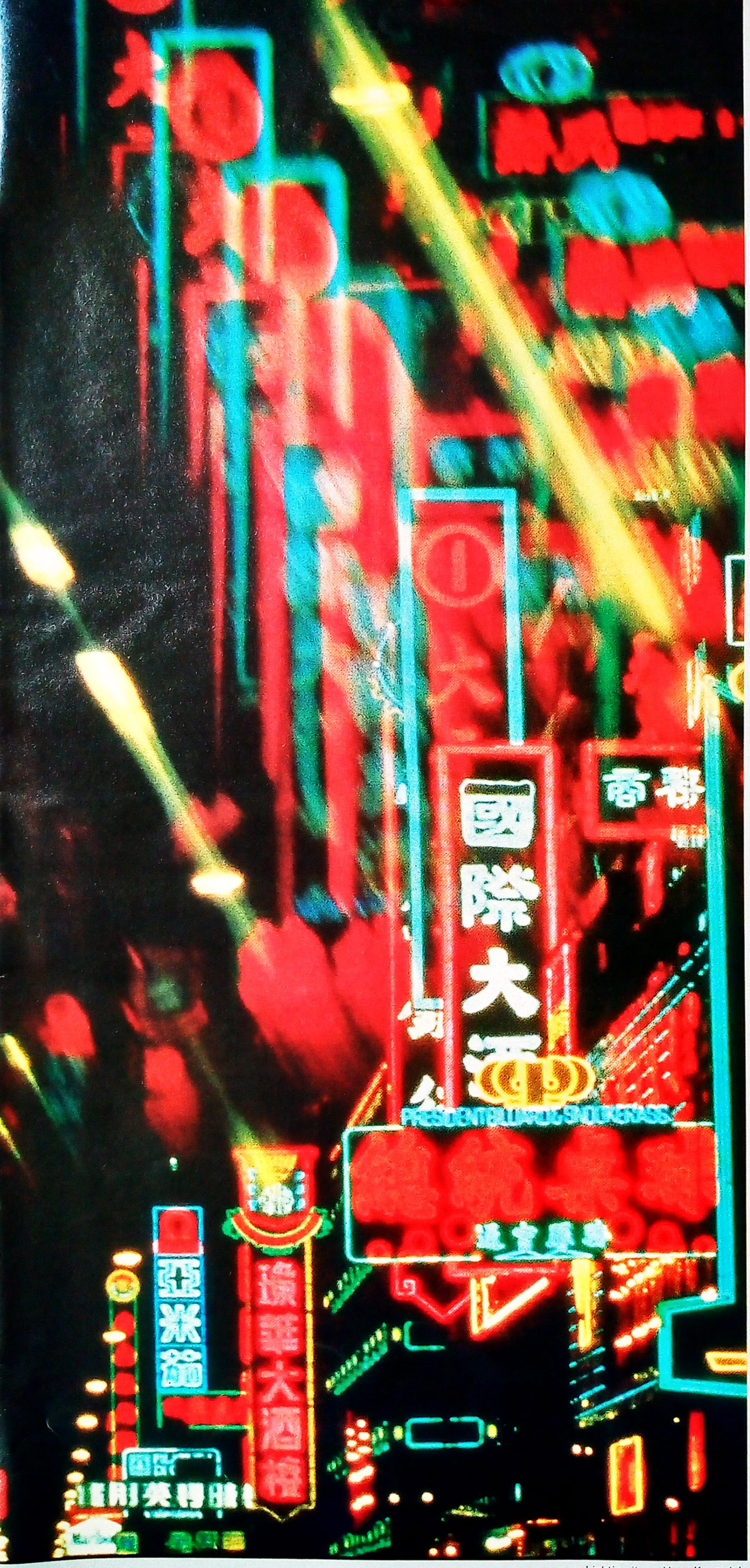
With these kinds of activities in mind, Joe Sweeney, a research director for the consultancy Gartner Group Asia Pacific, predicts more consolidation and partnerships are likely to occur over the next 18 to 24 months, as an ever-growing number of companies enters the multimedia business.

Several analysts say that in the next five years there will be a growing overlap between pay TV, Internet and telecoms companies in Hong Kong. At the end of that period, they expect the market will settle down and consolidate. Right now, "we're still at the early stage of the hype," comments Lehman Brothers vice president of equity research Philip Tulk.

Interestingly, Hong Kong property companies have emerged as the leading movers to jump on the high-tech and Internet bandwagon. Also on the prowl are old-style technology firms, hotel-management companies, manufacturers and even utility companies.

The strategies of entering the high-tech sectors vary. Some adopt a new moniker and corporate image, such as Cable & Wireless HKT — formerly Hongkong Telecom — whose name change was meant to crystallize the company's transformation from a voice-only operator into a company leading the way in seg-

Continued on Page 16



Lighting it up, Hong Kong style

Hong Kong's Networks

tech Spotlight

To get a taste of the possibilities for new media and telecommunications in Hong Kong, one need only look at some of the infrastructure currently being built. LMDS operator Hong Kong Broadband Network (HKBN), for example, plans to invest at least $HK830 million ($US106.7 million) over the next three years to establish its broadband infrastructure.

Founded just last year, HKBN's network infrastructure is provided by Japan's largest international carrier KDD Corp. The upstart relies on coaxial cables to access buildings, LMDS for the last mile, and 3Com Corp. cable modems that the company installs for free. By the end of this year, company officials say they expect to serve 1,480 buildings, or 25 percent of the population, and at least 3,552 buildings by 2003.

By comparison, hardwire system Cable TV, which began life as a wireless-cable operator in 1993, is now in the process of converting its network from microwave to fiber optic. It expects to pass a total of 4,000 buildings by the end of this year and 8,000 buildings by the end of 2001.

Garmen Chan, Cable TV's external-affairs director, says the company has close to 1 million fiber-optic lines today, representing about 60 percent of the whole network. "It is just a matter of converting the 40 percent that's left," Chan says. Right now, Cable TV has 450,000 subscribers and annual revenue of $HK1.3 billion ($US167.1 million).

This technology contrasts with C&W HKT's system, which, like the majority of telecom companies, provides broadband services over an asynchronous-transfer-mode network, a high-speed cell-switching network technology that handles data, real-time voice and video.

C&W HKT officials are reluctant to provide details about the infrastructure the company is building with Star TV. But they do say it will include a combination of many technologies, including satellite transmission, a broadband network and asymmetrical digital-subscriber lines, a technology used to transmit digital data over telephone lines at speeds of up to 6 megabits per second.

— *Véronique Saunier*

Hong Kong,

Continued from Page 14

ments such as video-on-demand, cellular and Internet services.

Another utility firm on the move is the power company CLP Holdings Ltd., whose new telecommunications unit expects to begin operations by the end of this year. CLP plans to use its existing fiber-optic network, which covers Kowloon and part of Mainland China, to offer telecom and Internet services.

Some are abandoning their traditional operations altogether in favor of the information technology industry. For example, Goldtron Holdings Ltd., once a consumer-electronics accessories and telecom-equipment manufacturer, changed its name to e.Kong and now operates online business-to-consumer Web services.

Cable & Wireless HKT's satellite facility

"Hong Kong has for a long time been a property-centered economy," explains Lehman Brothers' Tulk. "Recent adjustment in terms of property value means that real estate companies are trying to make up for lost business opportunities with new money-making activities."

Another reason companies from all sectors enter the high-tech market is Hong Kong's early recovery from the Asian crisis. While businesses in Malaysia, Thailand, Korea and the Philippines still have their attention fully focused on debt restructuring and recovering markets, Hong Kong companies already have the resources to diversify into the IT sector. To foreign in-

KWONG

vestors, Hong Kong companies are also perceived as a solid basis for advancing tech-related activities in China.

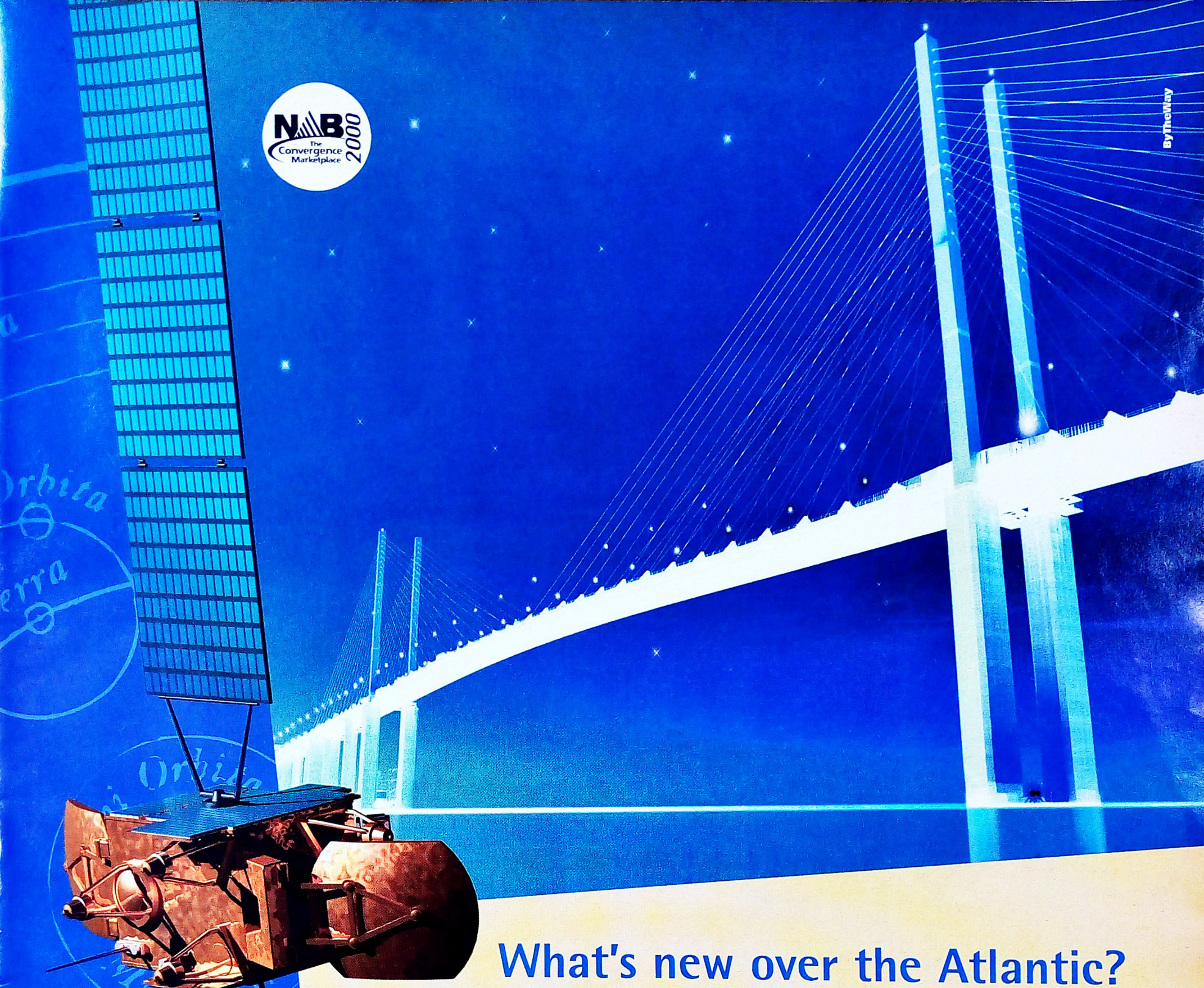
Needless to say, the government's regulatory changes made in 1998 are driving the changes as well.

Indosuez WI Carr recently set up a "convergence" team to study the trend. It singles out Hong Kong as one of the economies in Asia hurtling into the convergence revolution and views this year as a pivotal year for the convergence sector.

WI Carr has concluded that by the end of this year, Hong Kong's population density and aggressive deregulation will create the most competitive national broadband market in the world. "Hong Kong is an incredibly unique place," says Fredson Bowers, the head of WI Carr's regional telecom research team. "Broadband in Hong Kong is going to be ubiquitous, cheap and [everyone is] going to have it," he says.

It's clear that companies like Hong Kong's sole cable operator Cable TV — a subsidiary of the Hong Kong conglomerate Wharf Group — have the perfect infrastructure for delivering Internet access as well as TV signals.

Continued on Page 43



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Space to communicate

The headquarters of Galaxy Latin America, above, and Sky Latin America's dish farm, opposite page, have been command centers in the region's DTH battle.

Latin America's

Entrenched Warfare

BY JO DALLAS

Want the formula for direct-to-home television, the panregional, Latin American way? To hear executives involved in the business talk about developments at Galaxy Latin America and Sky Latin America, it goes something like this: Apply a healthy portion of expertise; add to it a liberal sprinkling of ego and several truckloads of money. Bake in a pressurized oven for a little more than three years, throwing in more of the three key ingredients every so often for good measure.

Problem is, nobody knows yet whether this amounts to a recipe for disaster or a recipe for success.

To be fair, Hughes Electronics Corp.-controlled Galaxy Latin America (GLA), which markets DirecTV, and Sky Latin America, backed by News Corp., Liberty Media International Inc. and some of the region's top TV companies, are working with entirely different mixes of raw materials.

They're waging what could easily be described as the world's largest battle for direct-to-home (DTH) supremacy, simply because it is the only DTH conflict that involves a vast number of countries, rather than just one. To win the war, both companies say they've pumped about $US1 billion each into their businesses.

Yet while they remain at loggerheads, many recent developments in their struggle — and the results they've achieved so far — are starting to provide some clues about what works and what doesn't when two DTH platforms engage in a high-stakes battle.

On the one hand, while DirecTV has had a first-mover advantage in some of the region's key markets, it has seen Sky score some remarkably solid successes. And that has clearly put DirecTV on the defensive. As a result, DirecTV has inked a series of expensive deals for exclusive carriage of some channels.

At the same time, it has had some trouble with the financial weaknesses and commitments of its local partners over the years — difficulties that are now making the platform rethink its equity arrangements altogether.

Over at Sky, a static power approach appears to be the order of the day. However, there are recent indications that News Corp. plans to bring together its worldwide satellite-TV operations for an eventual initial public offering that could strengthen Sky's financial clout. More immediately, it must deal with a certain unbalance of power when it comes to market coverage. Sure, both platforms have close to 1 million subscribers each. But chalk up a presence in more than 20 markets for DirecTV versus a mere four for Sky. Currently, Sky is struggling to launch in Argentina, a market where its panregional rival has been in business since 1998.

At the same time, both platforms must deal with competition not only from cable operators, but from country-specific DTH platforms like Televisión Directa al Hogar (TDH) in Argentina and Tecsat in Brazil.

The DTH situation in Latin America is in sharp contrast to the situation of Hughes and News Corp. in Japan. There, the two companies recently decided to lay down their arms and merge their respective platforms, DirecTV Japan and SkyPerfectTV. Similar conversations have occurred in Latin America, though for now, at least, the "trench warfare" will continue, according to one media analyst.

Sky and DirecTV keep raising the stakes higher and higher as they struggle for the hearts and minds of Latino television viewers.

GLA's president, George Foyo, says that a merger is not "a strategic requirement. We believe we can do it on our own."

Clearly, a different set of circumstances emerged in Japan. At the time of the merger announcement last month, SkyPerfecTV had 1.7 million subscribers, dwarfing DirecTV Japan's customer base of 400,000 homes. What's more, observers point out that the equity partners in Japan are entirely different than those in Latin America, and that the egos of the Latino partners are considerably more pronounced.

The planned closure of DirecTV's facilities in Japan means that there are only two places in the world where DirecTV has managed to secure its brand name: the United States and Latin America.

One of the largest irritants DirecTV has faced in trying to make its Latin American business work has to be Sky's programming strength that comes thanks to its equity partners.

News Corp.'s Fox-branded channels, combined with the programming clout of Grupo Televisa S.A. of Mexico and Brazil's Organizações Globo, have been a proven force in driving Sky's businesses.

Results speak for themselves. Although Sky launched in Mexico six months after DirecTV, it had 380,005 subscribers there as of January, compared with its rival's 149,153. Those numbers, supplied by programming sources, may at times be slightly lower than the platforms' official tallies, because they only count current paying subscribers at the end of the month. (See chart on page 20.)

In Brazil, Sky also launched six months after DirecTV, but led with 473,000 subscribers at the end of last year, versus 337,750 subscribers for DirecTV, according to official figures from each platform.

No wonder, then, that DirecTV responded to these knocks with some programming strikes of its own. To win back ground in Mexico, it acquired exclusive Friday-night boxing matches from Top Rank Inc. It struck on another flank, too, by initiating a two-for-one subscription offer, which has also run in Brazil, Panama and Trinidad.

DirecTV's renewed aggressiveness is particularly notable in Brazil. "I've been traveling all over Brazil, and every where I go you see DirecTV advertising, not Sky," says José Luis Frauendorf, who runs his own São Paulo-based pay TV consultancy, VDi rede de inteligencia. He reports that each platform has been selling roughly 25,000 subscriptions per month in Brazil.

Sky Mexico's local operating platform, known as Innova S.A., is riding the two-pronged, programming-and-pricing onslaught, and sustaining market share, says Bruce Stanforth, head of Latin American corporate research at BNP Capital Markets L.L.C. But, he adds, "The bad news is that it has had to take a cut in revenue." If Innova were not backed by mighty Televisa, he opines, the financial situation would look "a little shaky."

Televisa's vice president of pay TV, Jorge Alvarez Hoth, contends there aren't any cracks emerging. "We are on schedule to reach some 550,000 subscribers this year," he says. That's the number that the company has consistently quoted as its operating-breakeven point. But Sky's Mexican operation is hardly resting on its laurels. Last month, Televisa debuted a news channel, Imagen Informativa, hosted by some of Mexico's most-respected investigative reporters and available exclusively on Sky Mexico.

GLA has also kept the programming heat up. In addition to the Top Rank deal, it has inked a string of content agreements, including exclusive rights to distribute Disney Channel on DTH throughout the region. And it has struck exclusive deals with HBO Latin America Group in two crucial markets, Brazil and Argentina.

The agreement for HBO Brasil gives DirecTV exclusivity on the DTH window — shutting out both Sky and local platform Tecsat — though it doesn't exclude cable systems. That agreement was viewed as a particularly important one, because Sky's Brazilian partner, Globo, owns 50 percent of Telecine, the only other movie channel in the market with Hollywood films. Given the importance of movies in driving pay TV platforms, the possibility of Sky controlling both HBO Brasil as well as Telecine could have been a severe blow.

In Argentina, DirecTV's exclusive deal with HBO has a very different genesis. Essentially, it was an opportunistic response to the two-year old battle between HBO and Argentina's two dominant cable companies — CableVisión and Multicanal — over network-licensing fees.

Over recent years, the operators have been forcing down license fees as their market power grew. After protracted negotiations, HBO removed its movie services from the two cable systems and ran into the outstretched arms of GLA, which was waiting with a juicy contract worth between $US200 million and $US300 million over five years, according to a former senior executive at GLA. DirecTV paid a similar amount for exclusive DTH rights to HBO movie channels, says a former staffer at HBO Brasil. Both GLA and HBO declined to comment on these figures.

Even before the deal with HBO, DirecTV was the clear DTH leader in Argentina with nearly 120,000 subscribers after almost two years. Although TDH, focused on rural Argentina, has been in the market four years, it has only managed to notch up 16,000 subscribers (4,000 of those are part of a school project), according to TDH director Neil Bleasdale.

Sky is not even off the ground in Argentina. Its local partner, Telecom Argentina S.A., is under scrutiny from government authorities concerning whether, as a telco, it can legally hold a TV license. However, this isn't an obstacle to Sky's launch there, insists Vicente Diego, CEO of Sky Multi-Country Partners, the company that oversees most of Sky's Latino territories. But he declines to specify a launch-date deadline.

Sky is preparing for its Argentine launch with a retaliatory strategy that centers on what Argentines love to watch most: soccer. Together with Torneos y Competencias, Argentina's top sports channel, it co-sponsored the pre-Olympic qualifying matches held last year in Brazil.

When watching those games on TyC, viewers were constantly reminded that the images were "Brought to you by Sky." As Diego explains, "We want to give our customers a taste of what type of programming they can expect. Soccer is an important part of our overall entertainment strategy." He attributes strong subscriber growth in Chile and Colombia to the acquisition of major local-soccer rights in those territories.

Sky launched in Chile a year and a half after DirecTV, but, according to figures sup-

plied by programmers, the latecomer had 26,052 subscribers as of January, more than three times DirecTV's 8,634.

Results are better for DirecTV in Colombia, the fourth market where it competes head-to-head with Sky. There, DirecTV maintains a narrow lead with 38,894 subscribers, versus Sky's 37,342 subscribers, according to programming sources.

To Sky's credit, in both Chile and Colombia, it does not have the advantage of relying on a partner that is also a dominant national programmer, as it does in Mexico and Brazil. Indeed in Chile, Sky has no partner at all. There, DirecTV is partnered with a leading cable company, VTR Cablexpress, which is wholly owned by Denver-based UnitedGlobalCom Inc. (UGC).

However, the VTR connection hasn't always been an advantage, according to one former GLA executive. When he traveled down to Chile two years ago, the reception was distinctly chilly. "During one meeting, the general manager of VTR stood up and said, 'We never really intend to stand behind DirecTV,'" says the executive, who did not want to be identified. "At that point, my mouth dropped open. I just couldn't believe what I was hearing."

VTR — which at that time was owned by both UGC and Chilean conglomerate the Luksic Group — believed that pushing DTH would undermine its cable business, the source explains.

When asked about the situation with VTR, Foyo replies, "We have not been satisfied with the progress we have made; we haven't found the right formula. We are looking at that."

In general terms, Foyo explains that some national partnerships have caused, "conflicts of interest." And there have been financial problems as well.

Two of GLA's former partners, Mexico's MVS Multivisión, and Brazil's TVA, found their funding obligations difficult to meet. What's more, both companies felt a certain conflict of interest between DTH and their more established businesses as MMDS and cable-systems operators. According to industry sources, that was much more of a problem for TVA than for MVS. TVA bowed out of GLA altogether, while MVS exited GLA as a panregional partner, with its parent company, Grupo MVS, maintaining majority control at the local operating level. As a result, GLA and its other panregional partner, Venezuela's Cisneros Group of Cos., bought equity where necessary to fill the void.

There's little wonder that Foyo reports the GLA brass is "simplifying our business model, so that our partners will have equity at a panregional, rather than a local level." Because the plan is still a work in progress, he offers little more detail.

Equity changes are also on the horizon at Sky. News Corp. has officially announced that it's contemplating the idea of spinning off a company that would unite all of its international-DTH platforms, with speculation it may sell part of the new company in an IPO. In any case, it owns only 30 percent of Sky Latin America, and its partners in that business are in agreement with that plan, says Jessica Reif Cohen, media and entertainment analyst at Merrill Lynch & Co. in New York. News Corp.'s idea here is to "standardize technology, marketing and branding, and leverage those assets by bringing in strategic partners," she says.

There are some that feel the ultimate plan for both platforms in Latin America is simply to smoke the peace pipe and cut their losses. "Is [DirecTV] growing enough subscribers to justify the cost? It doesn't seem so," opines one senior programming executive.

According to one analyst who requested anonymity, Televisa has pumped a staggering $US200 million into Innova over the last two years on top of the $US375 million in senior notes it issued in 1997 to get the business launched.

Both panregional platforms appear to be some ways off from hitting operating breakeven. GLA stands by an earlier statement that it will reach that point when it has between 1.7 million and 2 million subscribers, though refrains from saying when that will happen. Sky declines to comment on when it expects to break even.

Maybe a merger may turn out to be the key to winning the DTH battle in the region. But it's nothing that is likely to occur any time soon. ■

Varying Accounts

Two views on Latino DTH-subscriber levels in select markets

	Programming Sources		Official Sources	
	DirecTV	Sky	DirecTV	Sky
Country				
Argentina	116,330	n.l.	112,100	n.l.
Brazil	n.a.	414,985	327,750	473,000
Caribbean	8,557	n.l.	n.a.	n.l.
Chile	8,634	26,052	n.a.	n.a.
Colombia	38,894	37,342	38,300.	n.a.
Costa Rica	3,283	n.l.	n.a.	n.l.
Ecuador	6,145	n.l.	n.a.	n.l.
Guatemala	6,146	n.1	n.a.	n.l.
Mexico	149,153	380,005	145,100	410,000
Nicaragua	191	n.l.	n.a.	n.l.
Panama	11,060	n.l.	n.a.	n.l.
Puerto Rico	n.a.	n.l.	16,300	n.l.
Venezuela	126,386	n.l.	127,700	n.l.

NOTE: Programming-source data reflects only paying subscribers and is current as of January 2000. Official data from the platforms is as of year-end 1999.

n.a.: not available **n.l.:** service not yet launched

TECH SPOTLIGHT: Broadband in the Sky

PART OF THE FUTURE PROSPECTS eyed by direct-to-home platforms like Sky Multi-Country Partners and Galaxy Latin America (GLA) involves the development of broadband-satellite pathways to the home. That is apparently part of the agenda for Sky shareholder News Corp., as it contemplates the idea of spinning off its worldwide satellite operations into a separate company.

But is satellite-broadband technology advanced enough to compete effectively with the likes of digital subscriber lines or cable? There's some basis for believing that it is becoming that way.

Recent technical advances mean that the projected costs and performance of broadband over satellite are comparable to those of wireline approaches. These advances come in addition to a basic advantage held by satellites.

"Regardless of terrestrial alternatives, the single biggest benefit that satellite technology offers is ubiquity," notes Sam Baumel, director of marketing at the consumer division of Hughes Network Systems (HNS). Hughes Electronics Corp., HNS's parent, also owns 78 percent of GLA, which provides DirecTV in Latin America.

The consumer division of HNS already markets a satellite-broadband service called DirecPC. It uses a satellite downlink that provides transmission speeds of up to 400 kilobits per second (kbps). The return path, however, is through a traditional dial-up modem and limited to 28.8 kbps. In conjunction with DirecTV, HNS also markets a combined video-and-data service in the U.S. called DirecDuo.

DirecPC has more than 100,000 customers in the U.S., the Pacific Rim, Australia, and Europe. The service isn't currently offered in Latin America, but will hit the market there later this year. Hughes also plans to roll out two-way satellite broadband, featuring satellite uplinking, late this year in the U.S. It's unknown when, and if, the service will be available elsewhere.

"We believe now that the [two-way] technology has gotten to the point that it is going to be cost effective for the individual or the small business," says Baumel.

Hughes may find a formidable opponent — and News Corp. a possible ally — in Gilat-to-Home Inc., a subsidiary of Gilat Satellite Networks Ltd. of Israel. Gilat and software giant Microsoft Corp. recently announced two-way satellite-broadband Internet access based on Microsoft's MSN service that's set to be deployed in the U.S. beginning in the fourth quarter. In a separate deal, EchoStar Communications Corp. will offer the same product in conjunction with its DTH service. Gilat has also formed a Latin American subsidiary.

The two-way offering leverages Gilat's SkyBlaster technology, which supports up to 40 megabit per second (mbps), Digital Video Broadcasting-compliant downstream-data rates, and a 150 kbps upstream return. Both the downstream and return path are transmitted by a 0.75-meter satellite dish, with a monthly cost in the $US50 to $US60 range. Such specifications are comparable to either cable or DSL.

Gilat's target markets are those not served by other technologies. In the U.S., that means rural and suburban areas. In Latin America, a different environment means different targets. "There's an opportunity there that you can couple telephony with the [Internet protocol] as well," says Dianne VanBeber, Gilat-to-Home's vice president of investor relations.

This may impact the DirecTV and Sky battle. Gilat doesn't offer a direct-to-home (DTH) video service, but under its agreement with EchoStar, the two will market both satellite television and data services in the U.S. Gilat could make arrangements with DTH providers in other markets.

Behind this flurry of satellite-broadband activity are technical improvements in three areas: the return path, data lag (also known as latency), and capacity.

Advances in electronics have helped reduce the expense of communicating back to the satellite. Gilat, for instance, can transmit a signal to a satellite using only a one-half-watt power-transmitter unit. Lower power requirements mean lower costs. What's more, a constant wireless connection holds its share of marketing benefits.

"While speed is important for the users who buy broadband, the always-on connection is just as important," says Gilat's VanBeber. As signals travel between the ground and the satellite, end-to-end connections have a round-trip delay of nearly one-half of a second. Standard Internet-protocol traffic involves a great deal of data handshaking. Gilat's solution is software that tells both ends that all handshakes have taken place. Therefore, only data is transmitted, not long strings of acknowledgements, and latency is reduced.

Finally, on the capacity front, satellite-delivered data services can transmit information directly into subscribers' computers. DirecPC, for instance, has agreements with some of the most popular Web sites allowing this to be done on a regular basis. As a bonus, users also benefit from locally stored, yet current, Web pages on their machines.

As Hughes' Baumel notes, "They never even have to go outside of their hard drive, which is absolutely the best performance you can get."

—Hank Hogan

Spaniards to Watch

By Elena Ruiz Argüello

Like the work of Spain's acclaimed movie director Pedro Almodóvar, the country's media industry has gained a reputation as something that's hot, sexy and well worth watching closely. Clearly, among the most dynamic companies are direct-to-home and programming-minded Sogecable, the debutante digital-terrestrial-TV service Quiero TV, satellite venture Hispasat, and leading cable operator ONO.

And as in the case of Almodóvar, some of those companies are paying attention to the classic rules of their trade at the same time they explore entirely new, cutting-edge avenues. Others are moving well beyond their homeland, most notably across the Atlantic, as they eye a global business. The following four stories profile the firms' key executives who are leading the charge into the future.

JAVIER DIEZ DE POLANCO

Eyeing the Interactive Prize

To understand the challenges for Javier Díez de Polanco, one need only look at a little slot on the top of the set-top boxes used by direct-to-home service Canal Satélite Digital (CSD). As CEO of Sogecable — the company that owns both that platform and a string of channels — Díez de Polanco is bent on getting consumers to increasingly insert their credit cards into the boxes, as he ramps up an e-commerce business and other interactive services.

It's not that the slot hasn't always been there since CSD launched its service some three years ago. But it was dormant until last December, when Díez de Polanco inked agreements with some of Spain's leading banks to offer electronic banking, and developed the necessary software. Díez de Polanco also signed a deal with Spain's largest department-store chain, El Corte Inglés. Under the pact, they'll create a shopping channel on CSD, even further increasing the revenue potential.

"Sogecable's development of interactive offerings of products and services will mean an important source of additional income through electronic commerce," says Díez de Polanco. He's counting on the development of those revenue streams to boost Sogecable's stock value moving forward.

But there are plenty of other things that will keep him occupied. According to one industry observer, "Díez has to try to increase CSD's services, to intensify subscriber loyalty, to compensate for the fact that DTH can't meet the huge demand for telephone services that will benefit cable operators."

Not only are some established cable players, such as ONO, offering both telephony and cable TV, but monolithic telco Telefónica S.A. is also jumping into the cable-TV fray this year, and that will pressure everyone in the business. The rivalries don't end there. CSD has another DTH platform, Vía Digital, to hold at bay, as well as the upstart digital-terrestrial-television service Quiero TV.

So far, he's running his business with flying colors. During this past year — his first year as CEO — Sogecable saw the best performance in the 10 year history of the company. The 1999 operating income of 132,000 million pesetas ($US800 million) was 27 percent higher than that of the previous fiscal year. He's also holding the DTH competition in check. CSD's subscriber base of 850,000 is almost double that of Vía Digital. And it is of no small note to him that Vía Digital's boxes don't have those convenient little slots.

Sogecable's flagship channel in Spain, Canal Plus España, also remains a clear success, with a total of 1.8 million subscribers some 10 years after it was first launched.

While he's still relatively new to his job, Díez de Polanco had his sights trained on Sogecable over the last decade as director general of the Prisa group, which owns Sogecable along with French media company Canal Plus S.A. Prior to that, he was director general of Spanish publishing house Santillana, and oversaw its subsidiaries in Argentina, Peru, Chile, Uruguay and Paraguay.

Abetting the future interactive growth at Sogecable is a new physical infrastructure. After years of transmitting from Luxembourg, CSD opened a digital-transmission center in Spain during February, allowing it to directly receive network transmissions and compress the signals of up to 36 TV channels, uplinked to an Astra satellite. The new center will make CSD's interactive-navigator system easier to use, as consumers choose between traditional TV channels, pay-per-view offerings, home banking, games and other interactive services.

February was also the month when Sogecable inked an important agreement with Warner Bros. International Television. That Time Warner Inc. subsidiary now owns 10 percent of CSD and another 10 percent of Cinemanía S.L., a movie-channel programmer with three networks. Sogecable holds the other 90 percent.

That deal comes just about a year after Sogecable started a channel with another Time Warner unit, Turner Broadcasting System International Inc. The new channel, CNN+, was one of the first local-market, native-language spinoffs of CNN International.

Clearly, Díez de Polanco, sees Sogecable's relationship with Time Warner deepening even further. His training as a lawyer seems to pop to the surface as he refers to how the new Warner Bros. deal has brought out "new perspectives on the fruitful relationship where both companies can collaborate."

Between the Time Warner connections, the banks and the department-store joint venture, collaboration clearly seems to be an important key for Díez de Polanco as he unlocks Sogecable's potential.

RAMON ESTEVEZ

Turning 'Nonsense' Into Profits

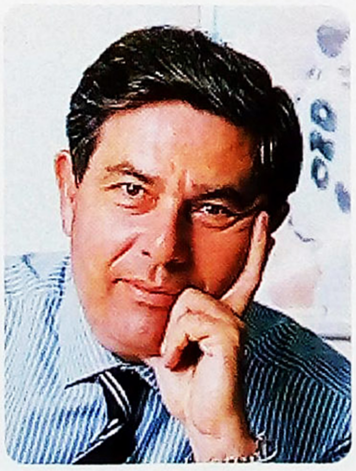
Completing complex missions by simple means is how Ramón Estévez defines his management style as director general of Spain's leading multiple system operator, ONO. And "getting things to work the first time" is his maxim.

To understand the complexity of his agenda, it helps to look at a few numbers for ONO, the brand name for the systems operations owned by Cableuropa. So far, the cable-TV and telephony company passes 362,000 households. If all goes as planned, that number will increase to 600,000 and the operator will reach 37 cities by the end of the year. By 2004, ONO is expected to pass 80 percent of its potential market of 3.8 million households and almost 300,000 businesses. ONO plans to reach 100 percent of the market by 2008.

Estévez, who has a degree in economics and business administration, isn't just looking to the gray hairs on his management team for brilliant ideas on how the company should achieve those goals. And that's just as well, since the average age of his staff is 27. "Many times, the biggest contributions come from very young people with a high interest in progressing," he opines.

He recalls the genesis of a soccer-rights-sharing agreement reached with Canal Satélite Digital (CSD), a deal that previously would have been considered unimaginable. "It came up as a nonsense proposal by one of our people when we were thinking about how to get more people interested in our services," Estévez explains.

Noting that sports is one of the prime motivators for people to subscribe to pay TV the world over, the staffer suggested that ONO try to obtain rights to some soccer games. "But it was impossible, as CSD had paid for the most important football rights," Estévez relates. But with nothing to lose, ONO offered CSD a proposition that it couldn't refuse: It would pay the DTH platform to let it transmit the soccer games over its cable system. "It was cheaper than having paid for the rights in the first place, and CSD profited from it," he adds. It was the start of a beautiful relationship. CSD and ONO followed that deal with the announcement that they will jointly develop new programming for cable TV — a project still on the drawing board.



Free local phone services for ONO's customers, another nonsensical idea that a young ONO employee proposed to Estévez, has also been realized. So far, no other company offering both cable and telephony in Spain has tried that strategy, although that could well change when the mighty telco Telefónica S.A. begins offering cable service this year.

Some of his industry colleagues say that Estévez's successes to date at ONO are only to be expected. "To get a company to lead its market and be profitable is not new to Estévez. He has done it several times and has even buoyed companies in great difficulties," says a person who worked with ONO's director general at three different companies. "He is very clever and knows to read between lines and has a special ability to deal with people," adds the source. It didn't hurt that Estévez cut his teeth in high-ranking positions at technology firms, including the local units of Data General Corp. and Digital Equipment Corp.

Estévez expects ONO to become profitable in about four years. The Internet, he says, is the "jewel in the crown." ONO's Internet-access service has three different price points for three speeds: 128Kbps, 256Kbps and 512Kbps. It is launching streaming video in the coming months, as well as video conferencing and multimedia services. ONO uses Cisco Systems Inc. headends, with DOCSIS-compliant cable modems from Motorola Inc's Broadband Communications Sector, 3Com Corp. and Nortel Networks Corp.

ONO also has set its sights on the Portuguese market, familiar ground to Estévez, who was director general of two companies based in both Spain and Portugal. ONO already has one Portuguese license, with a potential universe of 800,000 households. "In the next two months we will begin passing houses in Lisbon and Porto to offer telephone, Internet and TV," he says.

JACINTO GARCIA

Bird Man of Hispasat

The old notion that television isn't brain surgery may well be true. But if the television aspect of your business happens to involve transmissions from a fleet of satellites, it doesn't hurt if the head of your company is an astrophysicist and electrical engineer.

Such is the background of Jacinto García, who last June was named CEO of Spanish satellite-communications company Hispasat S.A. His main challenge is to expand the firm's overseas business and increase its client base well beyond its two mainstays: leading Spanish telcos Telefónica S.A. and Retevisión S.A. (Not so coincidentally, those companies also own Hispasat.)

People who are familiar with Hispasat say there's been a marked change since García's arrival. His more decentralized style of management, encouraging others to take on more responsibilities, is a welcome relief. "There is less bureaucracy at Hispasat since García arrived," says one outside observer.

That can only work to his advantage as he tackles one expansionist challenge in particular: finding customers for the just-launched satellite Hispasat 1C "in the shortest possible time after April 15, when its orbital trial ends," as García puts it.

SPANIARDS **TO WATCH**

Hispasat 1C, which is in the 30-degrees West orbital position, has a footprint covering Latin America, Mexico, the United States and a large part of Europe. Its 24 transponders are equal to the number of transponders on both Hispasat 1A and 1B combined. Unlike those two earlier birds, 1C uses a bi-directional, interactive system allowing two-way Internet access without the need for a separate return path. Its estimated life span of at least 15 years is also longer than those of the other two. And perhaps most significantly, 1C is the first Hispasat bird that allows for transmissions between the Americas.

García would consider it a success if Hispasat manages to lease out all of 1C's capacity by next year, and hopes to have leased half of it by the end of 2000. So far, Telefónica and Retevisión have booked four transponders each, and Portuguese cable operator TV Cabo Portugal S.A. has leased two.

One of the prospective clients on his hit list is direct-to-home operator Canal Satélite Digital, which currently leases space from the Luxembourg-based satellite company SES Astra S.A.

Brazil is among the overseas markets on which García is concentrating, as Hispasat has won a Brazilian orbital-slot license. Hispasat will launch a satellite in that location by 2003, he says, noting market research that indicates Brazilian telecommunications businesses will need 859 transponders in 2008. Hispasat plans to offer at least 75 of them.

Regardless, one industry analyst notes that "the Brazilian market is very open, and Hispasat will have to face a lot of satellite rivals, such as PanAmSat [Corp.] and Intelsat."

Hispasat's designs on Latin America are in synch with those of its owners. Telefónica is already one of the region's largest investors in television and telecommunications properties. And one of Retevisión's owners, Telecom Italia SpA, is involved in Latino telecommunications.

Latin America is also an area of the world that García knows well. Prior to joining Hispasat, he spent eight years in Spain and Latin America working for the satellite manufacturer Matra Marconi Space, which is owned by Lagardère Groupe.

But that's just part of his grand vision. The bird that Hispasat currently has on the drawing board, 1D, will cover the Middle East, "due to an agreement with operators of Asian satellites," he says, somewhat cryptically. It will have Ka-band transponders and, as does 1C, enable bi-directional transmissions.

Does that mean its two equity shareholders have aspirations in the East as well as West? García phrases it this way: "I believe our shareholders will demand global services, and they will have them."

LUIS SAHUN

Exploring a New Tech Trek

After 21 years in the staid, established telecommunications industry, Luis Sahún is facing the biggest challenge of his career, debuting a form of pay TV that's barely begun to emerge anywhere on the planet.

As the launch director of Spain's first licensed digital-terrestrial TV (DTT) system, Quiero Televisión, Sahún has a mandate to get the business up and running in what some might view as a nightmarish amount of time: a mere six months. That schedule clearly merits the phrase "in record time." But there's hardly anything out there against which to judge it. The only other DTT company up and operating, Britain's ONdigital, had a relatively luxurious year and half to prepare for its opening splash.

Making matters more complex, Sahún's past experience doesn't quite prepare him for his task at hand. Then again, what would? As one observer who isn't involved in Quiero puts it: "There are not many specialists in launching DTT. The main task [for Sahún] is to coordinate people so they are all moving in the same direction."

That's not to imply that Sahún hasn't gained a few clues on what to do over the years. A telecom engineer by training, and holding a masters in business administration degree to boot, Sahún was at one time director of transmissions at Northern Telecom S.A., the local unit of Canada's Nortel Networks Corp. Other stints included director general of telecom equipment maker Telsis S.A. and director of audiovisual business at Spanish telco Retevisión S.A. Not so coincidentally, Retevisión is not only a major shareholder in Quiero, but it also owns a network of retransmission facilities throughout Spain upon which Quiero is relying. Also of some help is ONdigital, a corporate cousin to Quiero by way of their mutual shareholder, the British Independent Television company Carlton Communications plc.

Sahún's main responsibility at Quiero is to take care of all the technological and organizational aspects of the launch. That involves overseeing equipment purchases, establishing connections with all the transmission sites and creating a central digital-transmission center in Tres Cantos, near Madrid. His most important challenge is to orchestrate a series of projects involving the installation of equipment and a team of 135 people.

Sahún says there's good reason for the rapid launch. "Pay TV competitors are sharpening their knives and have very aggressive marketing campaigns," he says.

"In the next 10 years, pay TV penetration can grow to 50 percent of Spanish households, and we will try to get at least 30 percent of that," says Sahún. "It is so essential that we make decisions very quickly. Many of them get made in the nick of time, because the more we delay the DTT launch, the more our competitors will benefit."

Sahún has made several decisions concerning the systems' technology, such as to use a single-frequency network transmitting the same signal throughout the country. "Our technology is more advanced than that of ONdigital, because technology is now more advanced than when DTT was launched in Great Britain," says Sahún, who explains that ONdigital uses a multi-frequency network.

Another decision was to use an application-programming interface (API) operating system for the Digital Video Broadcasting (DVB) standard. But because the Europe-wide DVB specification for multimedia home platforms (MHPs) won't be available until next year, "we took a transitory decision, which is to use the operating system of Open TV Inc. and the conditional access system of Swedish company Nagra," Sahún says. "But once MHP is ready, we will migrate from Open TV to MHP."

Those who know Sahún say that the tasks for Quiero's staff are made easier than they might be, because he's very communicative, easy going and prone to working very long hours. Lately, his workdays have run from 9 a.m. to 11 p.m. He's also known for his patience. One coworker reports that he's only seen Sahún get really angry two times over the last three years, and "for very good reasons." Everyone should be so lucky. ■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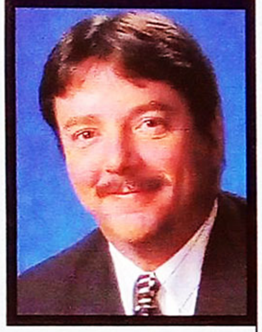
BY ROGER BROWN



IN SYNC

It's become an accepted practice for service providers to often give things away when they enter a new territory and are trying to capture market share. But in the case of some cable operators, the practice could come back to haunt them.

The problem is that consumers become conditioned to getting something for nothing, and unless the service provider can create a new level of value, converting those users into paying customers can be a daunting task.

Take the case of pay TV. In France, pay-per-view (PPV) movies — be they analog or digital — aren't encoded with any copy protection, according to officials from Macrovision U.K. Ltd., a company that provides copy-protection technology. This allows pay TV customers who buy PPV programs to copy them freely.

And they do. Research underwritten by Macrovision reveals that 60 percent of French respondents to its survey admitted to copying PPV programs, while 41 percent of respondents in the United Kingdom admitted to doing so. The British number may be lower because digital PPV movies are copy protected there. Furthermore, nearly half of those who actually purchased multiple PPV movies copied at least one of them, and a startling 11 percent said they had copied 10 or more movies over the past year.

And while the figures may raise some eyebrows, they may be just the tip of the iceberg, since a large number of people refused to answer the questions related to how often they copy material. Eight percent of PPV purchasers declined to reveal how many times they had copied a program, and 26 percent refused to mention how many times they'd tried to do so, according to Macrovision.

Of course, simply copying a PPV movie to view on a future date doesn't really pose a threat to cable operators' revenues. Or does it? What happens if a customer invites other potential PPV customers over to watch the recorded film? In this age of perfect digital copies, there's the threat that the movies will be copied and sold illegally, or even posted in the Internet.

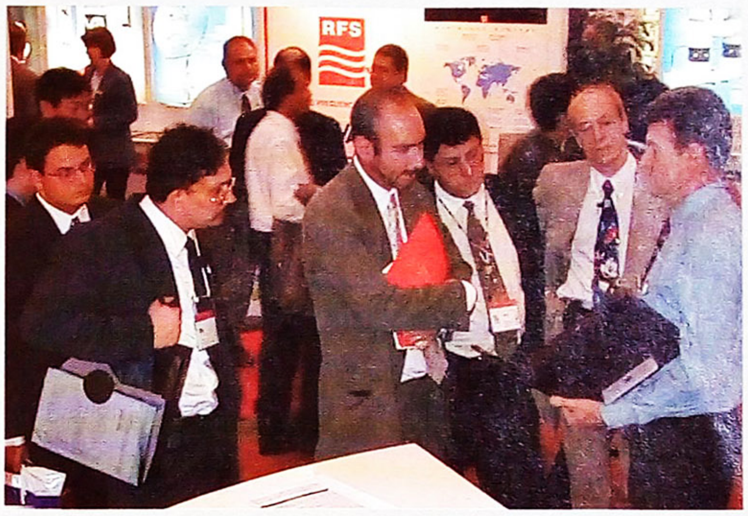
That concern is apparently very real. "The results of this survey endorse the concerns of rights owners and PPV program providers about the losses they can incur from unauthorized copying," notes Jeremy Corcoran, director of PPV copy protection at Macrovision. Naturally, that's a self-serving statement, but the point shouldn't be lost on cable and broadcast-service providers. The potential for significant revenue losses is high.

So what does a service provider do about it? He can copy protect the content (as Macrovision no doubt hopes). The danger is that consumers will cease or severely curtail their purchases of PPV programs, or even disconnect and switch providers. But as television moves into its next phase, interactivity, protecting content and intellectual property should become of utmost importance.

Euro Standard Gains Converts

DVB Advances on Many Fronts as U.S. Pushes ATSC

BY NATALIA A. FEDUSCHAK



Executives check out Nokia A.B.'s MediaScreen DVB-T set top at last year's Telecomm '99 show in Geneva, Switzerland.

If Peter MacAvock has his way, in a few short years the world — perhaps even viewers in North America — will be watching digital television that adheres to Digital Video Broadcasting (DVB) standards.

To make progress toward that goal, MacAvock is spearheading the Digital Video Broadcasting Project, an industry-led consortium of more than 250 broadcasters, manufacturers, network operators, software developers and regulatory bodies in more than 30 countries committed to designing global standards for the delivery of digital television and data services.

"We've been very successful," says MacAvock, the Geneva, Switzerland-based executive director of the project. "There are 20 million decoders in homes around the world with DVB technology in them. We're trying to ensure that we meet market requirements. The DVB project is dominated by the industry, and is likely to become the industry's choice," he predicts.

Initially established in 1993, DVB standards cover all aspects of digital television, from transmission through interfacing, conditional access and interactivity for digital video, audio and data. Today, a number of extensions to the standard are being developed to cover return-path communication, in-home networking and other trends.

The consortium initially came together to create unity on the road toward global standardization, interoperability and future-proofing after European legislators tried to impose industry measures for high-definition television (HDTV), says MacAvock. "The industry torpedoed all their efforts to prevent a heavy-handed regulatory approach," he says. "We very rapidly felt [regulations] couldn't exist without a commercial basis, so we thought [we'd] go at this commercially. What we did in the European context was definitely correct."

Outside Europe, there are numerous broadcast services using

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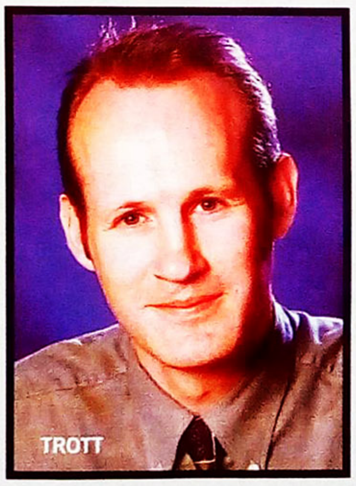
Lessons From the Digital Front

BY HANK HOGAN



Spring may be in the air in the Northern Hemisphere, but cable operators worldwide are focused on what they hope is an all-season technology: digital.

With digital cable, operators will be able to offer subscribers more services and features. The result should be happier subscribers — thanks to better video and the advent of interactive products — and happier operators, thanks to lower churn levels and higher revenues.

"There is a huge anticipation that digital cable will be a massive product," says Tom Rhinelander, an analyst with the market-research firm Forrester Research Inc.

In some cases, it already is. In the United States, AT&T Broadband began its rollout of the new technology nearly two years ago, and already has about 2 million digital-video subscribers. Time Warner Cable began its rollout in the middle of 1999, and had more than 400,000 digital subscribers by the end of the year. The company's subscribers appear to have an insatiable appetite for digital service, as projections call for 1.2 million customers to be signed up by the end of this year.

In the United Kingdom, Cable & Wireless Communications plc started its digital conversion late last year. The system, which is being acquired by NTL Inc., has de-

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Lessons,

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ployed 300,000 digital set-top boxes with integrated cable modems from Pace Micro Technology plc.

As in the past, cable operators are learning several valuable lessons from of these deployments. But that doesn't mean there is a consensus. In fact, unlike digital technology itself, the answer is somewhat fuzzy.

Some operators advocate beginning with expanded video services only, while others assert interactive services are the way to go. Even the question about providing content in a "walled garden" has spurred debate on both sides.

Meanwhile, everyone seems to agree on two things. First, a successful digital rollout requires a renewed commitment to training subscribers and customer-service representatives. Second, digital means money.

"We've been very, very pleased with the performance of digital cable," says Cathy Kuo, vice president of video marketing for AT&T Broadband.

Adds Time Warner Cable vice president of communications Mike Luftman: "I think our only problem is getting enough boxes to satisfy demand."

AT&T Broadband, with 2 million digital subscribers, expects even further growth as it rolls out Motorola's DCT5000 digital set-top box.

Despite the apparent universal satisfaction with digital cable, AT&T and Time Warner have followed very different paths to deployment. In the end, however, they may have arrived at the same conclusion.

AT&T implemented digital primarily to gain bandwidth. Because the technology allows a more efficient use of spectrum, AT&T was able to offer its subscribers more channels and selection. That's also how the company marketed its product. If a subscriber was known to enjoy sports, for example, digital was touted as a way to get more sports channels. If a subscriber wanted movies, then digital was a way to get more movies. AT&T also took advantage of the switch to digital to streamline and simplify what had been almost an ala carte approach to service selection by subscribers.

When initially launched, the digital-video programming tier was not intended to provide interactive services. However, Kuo credits digital with reviving the pay-per-view category, particularly because consumers were given the opportunity to order movies via the remote control. What's more, the advent of digital has helped AT&T slow the erosion of subscriber growth as a result of competition from direct-to-home satellite services.

Part of the reason for this, according to Kuo, is the interactive electronic-program guide that comes with the service. "Our customers really enjoy it because it gives them a whole new way to watch and manage their programming. It's a little difficult to talk about the guide from an acquisition standpoint, but it's a terrific retention tool," she comments.

Even more growth is anticipated once AT&T begins rolling out new, fully-interactive DCT5000 set-top boxes from Motorola Inc.'s Broadband Communications Sector (formerly General Instruments Corp.)

Time Warner, on the other hand, was forced to delay its digital launch because its set-top, provided by Scientific-Atlanta Inc., was late. While it was waiting, the operator used analog set-tops to fend off satellite competition while it rebuilt its cable plant to two-way status. According to Luftman, the company's widely documented (and often mistakenly characterized as a failure) Full Service Network trial in Orlando, Fla., convinced Time Warner that there was significant pent-up demand for interactivity.

"We found out from our experiment at the Full Service Network that there was a real business there, especially for movies on demand. So it was a way not only of working off our own plan to rebuild our systems, but also to prepare ourselves not just for one-way digital, but for on-demand digital programming," he says.

However, technological wizardry should be approached cautiously. Both AT&T and Time Warner made customer training a key part of their deployment strategy. Technicians not only show customers how to operate and control the set-top, but they also provide printed materials. In extreme cases, Kuo says, AT&T provides a videotape to smooth out the learning curve.

Kuo also notes that the VCR in a subscriber's home is a good indicator of just how much handholding will be required. If it's blinking 12:00, that might be a clue that the subscriber either hasn't figured out how to set the clock or has never tried. In either case, the installation technician has been signaled that the customer may be technologically challenged.

AT&T and Time Warner also used the digital switchover to train their customer-service representatives (CSRs), because they are on the front line of customer contact. It's likely that subscribers will call CSRs as a first attempt to resolve problems.

Digital deployments across Europe have also provided many lessons. Harmonic Inc. of the U.S. is involved in a Telewest plc video-on-demand deployment in the

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Around The World

ASIA

Com21 Inc. won an initial order from Korean telecommunications-equipment supplier NEO Telecom for more than 18,000 DOCSIS-certified DOXport 101 cable modems that will be shipped to broadband-Internet service provider Korea Thrunet Company Ltd. Citing the growing Korean broadband-Internet market, NEO Telecom said it expects Korea Thrunet to deploy as many as 500,000 cable modems by 2001, as it replaces legacy, proprietary cable modems with DOCSIS-based equipment.

Korea Thrunet provides high-speed Internet service to more than 150,000 customers and telecommunications carriers such as SK Telecom Co. and Shinsegi Telecomm Inc. In Japan, meanwhile, Com21 said its ATM-based ComUNITY Access System passes nearly 2.4 million households. The Strategis Group has predicted that the market for cable-modem technology in the Asia-Pacific region will grow to 2.5 million residential customers by 2003.

Excite@Home Corp. said it will fuse its Australian Excite and @Home operations under a new umbrella company called Excite@Home Australia Pty Ltd., mirroring its corporate strategy in the United States. Excite@Home's Australian entity will meld its operations, content programming and joint-distribution arrangements, assume the management of Excite Australia, and incorporate Excite's technology and content into the recently launched Optus@Home broadband service and Optus Internet dial-up service, the company said. As part of the corporate consolidation in Australia, Excite@Home has agreed to grant Liberty One, the former partner of Excite in Australia and the Asia-Pacific region, the option to boost its ownership in certain unnamed Asia-Pacific territories to 60 percent from 50 percent under the former Excite Asia-Pacific venture. Excite@Home said it will maintain a 40 percent stake of the Excite Asia-Pacific unit.

Motorola Inc. won a "multimillion dollar" order for its Streamaster technology from Malaysia's Network Guidance, an operator of multi-media-on-demand (MOD) services over television. Motorola's Streamaster technology is an open-multimedia architecture that combines the functions of a broadband router, a network computer and a digital home-theater platform.

Network Guidance, which expects to offer Streamaster systems to 150,000 homes over the next five years, said it plans to begin deployment of the Motorola's Streamaster units by mid-year and offer a full commercial launch of the systems to its customers by the fourth quarter. Using Motorola's Streamaster architecture, Network Guidance plans to offer video-on-demand, a variety of sports and drama programs in different languages such as Bahasa Malaysia, English, Chinese and Hindi, and karaoke-on-demand and music videos available on the Music-U-Want channel.

SoftNet Systems Inc. and Pacific Century CyberWorks Ltd. have launched Pacific Century SoftNet, a 50-50 joint venture that will market high-speed Internet access and expertise to Asian cable operators, which serve 130 million subscribers in more than 50 countries, the company said. Pacific Century SoftNet is headquartered in Hong Kong, and the company's chairmanship will be rotated annually each year between the two parent companies. Pacific Century Group became SoftNet's largest shareholder in January when it paid $US129 million for five million shares of SoftNet common stock.

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Dissecting,
Continued from Page 28
U.K. Clem Auvray, product marketing manager with Harmonic, points out that many times operators may not be sure which digital service will be the most profitable or the most desired. That has implications for the architecture of the network.

"The key thing [is] flexibility in the bandwidth," Auvray notes, adding that one important part of achieving that flexibility is the use of open standards.

Andy Trott, chief technical officer for Pace, agrees that open standards are vital. This is especially true because the time between the signing of a contract and the rollout of equipment can be 18 months to two years. An open standard ensures compatibility, despite rapidly changing technology. However, he also says that procurement departments need to talk to engineering groups so that the technical specifications for a set-top box don't overwhelm the cost constraints.

Trott says he's witnessed a change in thinking around the whole question of whether operators should simply add more video with digital equipment, or provide a full suite of interactive services. The answer has a direct impact on system architecture, because the former requires only an inexpensive, telephone return, while the latter calls for a more costly, real-time approach.

"In the past, [operators] adopted almost a satellite model of 'Let's get additional TV into people's homes and put a telephone modem in.' They're now, all of them, saying, 'We've got to have a cable modem in there,'" observes Trott.

Merely installing a cable modem, however, isn't nearly enough. Subscribers will use interactive services only if the content is compelling enough. But that raises another issue: Who will provide that compelling content? Some argue that cable operators will have to do it themselves, or risk losing revenue.


CHAO

"If you just act as a pipe to the Internet, you're going to be a giant pipe with no real value added. If everybody can do that, then what's the business proposition for you?" says Clint Chao, vice president of marketing for Skystream Corp.

Not surprisingly, Skystream offers a solution in media routers that sends content down unused bandwidth. This technology is aimed at helping create a "walled garden," a place where subscribers will linger. Presumably, such a walled garden will cause subscribers to spend time doing things such as shopping. This will build brand loyalty and enable other revenue opportunities.

However, analyst Therese Torris of Forrester Research's Amsterdam office isn't sure that cable operators can pull this off, particularly in Europe. "They do not have the content-production expertise needed for producing interactive services," she says. "Their willingness to retain control over interactive services in the walled-garden approach will only slow them down."

Torres advocates breaking down the walls and supplying the content through open standards. Others argue it's simply too early to tell. As Forrester's Rhinelander says, "We're not really at the stage where a lot of lessons have been learned." ■

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Operators, Equipment Vendors Bundle Up in Europe

If you thought telephony and Internet access were hot in Europe before, take a look at the new action

BY CRAIG KUHL

Cable telephony and high-speed Internet-access revenues in Europe are expected to triple to about $US10 billion by 2003, according to a number of forecasts. That's prompting a growing number of the region's cable operators, as well as U.S.-based telephony and cable-modem equipment providers, to seriously consider adding the services as integral parts of a growing bundle of offerings.

Europe's liberalized telecommunications markets, coupled with an increased interest in cable telephony as a viable, less-expensive alternative to local-phone service for consumers, is driving more multi-service operators to launch the telephony-over-cable.

Many large telecommunications companies that own cable operations are spinning the systems out into separate subsidiaries that can operate under less-stringent regulations. The result is a gradually maturing cable-telephony business.

"The European cable-telephony market has been emerging, but there's pushing and pulling at the same time," says Ham Mathews, director of marketing for ADC Telecommunications Inc., which formed a worldwide alliance with Alcatel Alsthom S.A. in early March to offer cable-telephony solutions to global-communications companies.

"The pull is cable companies providing telephony and undercutting national phone services. The pushing comes from more consortiums being formed by cable companies to compete with national phone services," Mathews says.

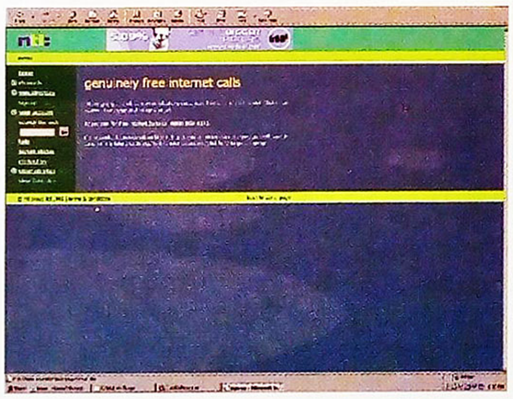
Utility companies own the rights of way to their own infrastructures, and cable systems are one delivery vehicle by which telecommunications companies can offer phone service and not pay high regulatory tariffs, Mathews notes.

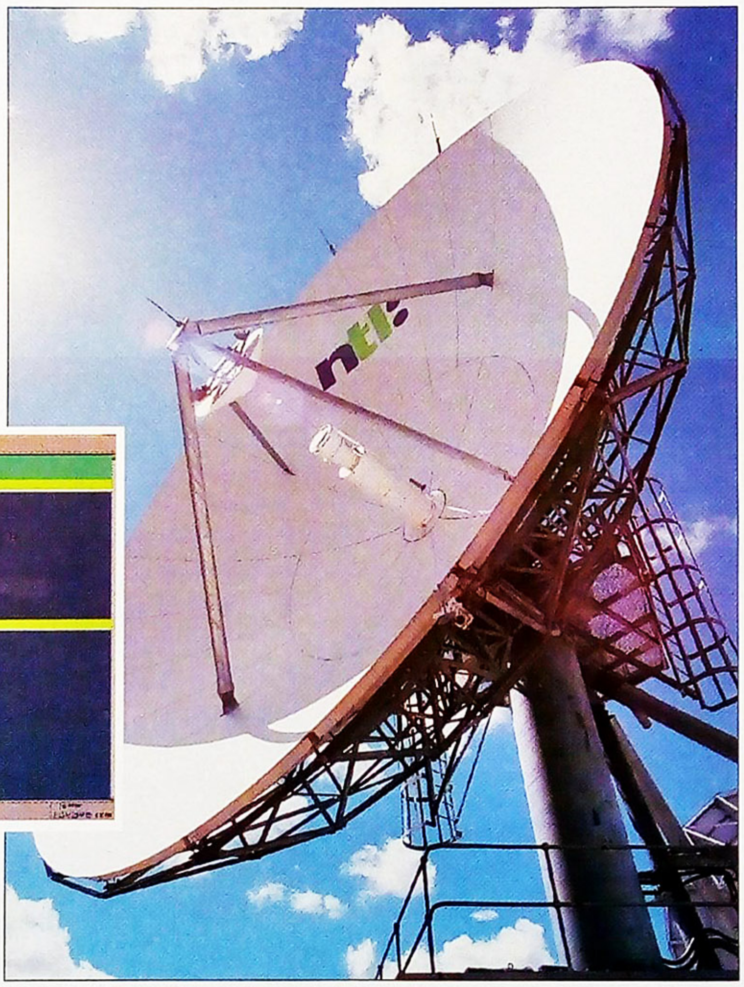
Cable telephony can also provide substantial cost savings on a per-subscriber basis. "All the infrastructure work is in place, so it's cheaper for new subscribers and existing installations, because they're already wired," he says.

For example, a typical new-customer phone-line installation using copper twisted-pair wiring runs about $US700, according to industry experts. That price is reduced to $US150 to $US200 for a cable-telephony install, and the substantial savings is turning the heads of many cable operators.

Despite the lower costs, the demand for cable telephony varies greatly from country to country. "Customer demand is mixed, so cable telephony needs to be bundled with video and even Internet service. It's all over the map," Mathews concludes.

British operators NTL Inc. and Telewest Communications plc have long marketed telephony service along with TV as part of a bundled package. Now they're adding Internet access. This month, NTL will begin offering a free dial-up Internet service, called ntlworld, to its residential-telephony customers who own PCs, and it plans to offer Internet access over the TV soon thereafter. Meanwhile, Telewest is offering its SurfUnlimited flat-rate Internet service for $US16 per month.





NTL's headend facilities, above. The operator is expanding with its ntlworld free Internet service, inset.

The strategy is simple, asserts NTL U.K. group public relations manager Will Robson. "We want voice and telephony customers, that's the deal. We want to get dial-up customers and upgrade them to our other services," he says.

Those other services, Robson notes, will eventually include digital TV, interactive services via cable TV and mobile phones, and telephony.

Initial response to ntlworld, which customers receive free if they pay at least $US20 per month for their phone service, has been encouraging. "We have 100,000 customers pre-registered in the U.K., and our plan is to take our U.K. model and expand into Europe, which is our primary target market," he says.

Some experts, however, caution that the cable-telephony market may take some time to mature in Europe. "It's most often sold in a bundle and as an add-on product. We have to understand that cable-telephony is a substitute for fixed-line service, and networks haven't really been ready for it from the technology, customer-service and marketing aspects," says Lars Godell, European telecommunications analyst for Forrester Research B.V.

Moves such as NTL's offer of free Internet service, he says, are strictly marketing decisions. "It's clearly a marketing move and probably will be short-lived. As for cable-telephony service, it's probably destined to be part of bundled services. I don't see cash bonuses for signing up for cable telephony," he adds.

Robson disagrees. "Our plan is to offer this as a sustainable product, and the impetus behind it is the £8 billion [$US12.6 billion] we've spent on fiber in the past few years and our extensive experience with [Internet-service providers], which isn't widely known," he says.

What is growing, however, is the appeal that cable telephony in Europe holds for U.S. and European vendors such as Com21 Inc., a supplier of system gear for the broadband-access market. "We've always looked at cable telephony as a key market, and built an [asynchronous transfer mode]-based system to support voice and data," says Buck Gee, Com21s' vice president of corporate marketing. It's an application for which the company developed its CommUNITY VoX, the customer-premise device that enables cable telephony.

Com21 and Tdsoft Communications Ltd., a provider of voice-over-next-generation access (VoNGA), will combine Com21's equipment with Tdsoft's VoNGATE voice-access gateway to provide cable-telephony service in Europe early in the second quarter.

"Recently, deregulation and competition have caused us to be more proactive. We've looked at cable telephony for years, but it never has been cost or quality efficient. Now, with modem penetration rates at five percent and projected to be 15 to 20 percent, there's a migration to cable telephony," Gee says.

The migration to cable telephony is appealing to other major telecommunications players, including Lucent Technologies Inc. The communications-equipment giant last month announced plans to acquire DeltaKabel TeleCom c.v. of the Netherlands.

"We've put together a lot of products in North America; now we want someone in Europe who is local and with first-user advantage, like DeltaKabel," says Dee Dee Nye, vice president and general manager of cable solutions for Lucent Technologies.

DeltaKabel has in place telephony-enabled cable modem systems in customers' homes and offices, something Lucent says was a major attraction to the company. "They have the right set of products, local-market knowledge and scalability. With their modems and Internet-protocol trials going on, and our ATM edge with our core products, it's a nice fit," Nye says.

Lucent, however, has no illusions about the difficulties in deploying cable telephony in Europe. Adds Nye: "Barriers still exist. There's a certain reluctance toward cable telephony, and regulations need to be liberalized; standards need to be shaken out, and operators' knowledge about cable telephony needs to grow. But we are starting to trial it." Those trials will soon expand to Asia, Nye says.

Europe is the plum, however, for multi-service companies such as NTL, and bundled services such as cable telephony, Internet access and others are expected to help them as the push into the market. "Providing data, voice and video is our strategy, that's why we acquired [cable operators] CableCom Group A.G. in Switzerland, 1G Networks in France and Cablelink Ltd. in Ireland0," Robson says. ■

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THE NEW VISION FOR TELEVISION

DVB,
Continued from Page 27

DVB standards, with millions of compliant decoders operational in Europe, North America, Latin America, Africa, Asia and Australia, says MacAvock. He argues that these decoders have been highly popular with consumers around the globe, and the growing popularity of the standard leaves North America as the lone area to embrace the Advanced Television Systems Committee (ATSC). That standard for digital television uses the 8 vestigial sideband (8-VSB) modulation system.

"Our principle is not to change the antenna that is attached to the television," says MacAvock. "We felt new services in television should not be restricted to HDTV. We felt the whole area of interactivity would be important to the industry, and we were right."

The first DVB services to go on the air outside the United Kingdom, where DVB-standards were first introduced, were in Hong Kong and South Africa in 1995.

By the end of last year, broadcasters in Australia and Singapore also chose DVB as their standard. And in a move that some argue greatly boosted the DVB standard, last month Brazil's ABERT/SET Digital Television Group, the official committee charged with testing the country's digital-terrestrial-television systems, recommended the use of DVB-like systems, called coded orthogonal frequency-division multiplexing (COFDM), for their future digital-broadcasting requirements.

"Brazil is a key South American market, and this recommendation represents the first time a 6 MHz country outside Japan has recommended COFDM technology," says DVB chairman Theo Peek. "It finally puts to bed all the criticism about the availability of 6 MHz DVB-T equipment and sends a clear message to [TV companies in] the entire region and indeed the rest of the world that are presently considering their future [digital-terrestrial television] requirements."

DVB proponents suggest that it is capable of delivering a crystal-clear picture to televisions connected to portable set-top antennas in environments where reception is poor, such as city apartments, or even to receivers on the move. DVB-T has been tested in both slow-moving city trams and at speeds in excess of 170 miles per hour.

Although most observers expected Brazil to follow the U.S. standard, MacAvock says South America presents a real opportunity for DVB because the continent is dominated by a handful of powerful media companies like Argentina's Grupo Clarín and Brazil's Organizações Globo, both of which are willing to experiment with various television systems.

"These organizations have the wherewithal and organization to do things with DTV," says MacAvock. "The Brazilians have embarked on terrestrial TV. They wanted to investigate their options. We in DVB felt we were up against a difficult organizational situation because of pressure from the U.S. to adopt their system."

That other countries are moving toward the DVB standard is further proof that the rest of the world is not necessarily ready to jump on the U.S. standards bandwagon. "There used to be a premise that what the Americans did was the best," says MacAvock. "Now we're starting to see that some of the other countries' technologies are starting to get the whole standards thing right. We think, technically speaking, the Americans are wrong."

Of course, there are two sides to every story. John Taylor, vice president of public affairs and communications at Zenith Electronics Corp. — the company that initially developed the 8-VSB tech-

nology — says he doesn't necessarily agree that the rest of the world will jump on the DVB-standards bandwagon.

"The digital transition is well underway using the ATSC standard," he says. The U.S. standard has a larger coverage area than DVB, while interference rejection and impulse noise are lower, he says. Already, at least 120 stations in the United States are using the ATSC standard.

"Europe never really cared about high-definition television," which is one of the reasons why the continent has preferred the DVB standard, says Taylor.


MacAVOCK

As for Brazil, the jury is still out, he says. "This was a very preliminary report. We believe the ATSC standard still has an excellent opportunity to be the standard in Brazil," he says.

The beauty of DVB, argues MacAvock, is that the consumer has many options for interactive applications and doesn't necessarily need to buy a new digital television to get digital quality.

"We are a bit pipe," says MacAvock. "We're saying we'll deliver what you want. We don't care what you want to deliver. We see the convergence that is taking place. People are beginning to see television as a medium of application."

With this in mind, television manufacturers have begun to build sets that promote the DVB standard and some of its new extensions. Canal Plus S.A., Philips Electronics and Sony Corp. have teamed up to support the global development of a range of digital-TV appliances for the consumer market. They will be based on common international standards, in particular the multimedia home platform (MHP) extension of the DVB project.

In parallel with the deployment of a new generation of set-top boxes for Canal Plus' broadcasting territories in Europe, Philips and Sony have said they foresee the market introduction of other possible devices such as integrated-digital-TV sets (IDTV), Internet-TV devices, DVD combination devices and home-network devices.

OpenTV Inc. and Matsushita Electric Industrial Co. Ltd.'s Panasonic have also formed a strategic alliance to deliver MHP-compliant interactive-television solutions.

Through the alliance, the companies will cooperate on the development of a fully compliant extension to the OpenTV operating platform. MHP is a DVB specification for an interoperable interactive-television platform based on Java technology.

The MHP extension will offer full interoperability between services, set-top boxes and television networks, according to the companies. It will also give OpenTV-powered set-top boxes the ability to receive MHP-compliant interactive programming in addition to OpenTV-based interactive content. OpenTV and Panasonic will conduct MHP trials this year.

MacAvock says the next step in Europe and Asia is to finalize the requirements for DTV. "Expanding out of pure pictures and sound to all kinds of areas, that is new territory for broadcasters," he says. "But it's also a new way of making money." ■

Britain's Kingston Maintains Cutting-Edge Reputation

Hull treds a unique telecoms and TV path – and makes its citizens rich in the process

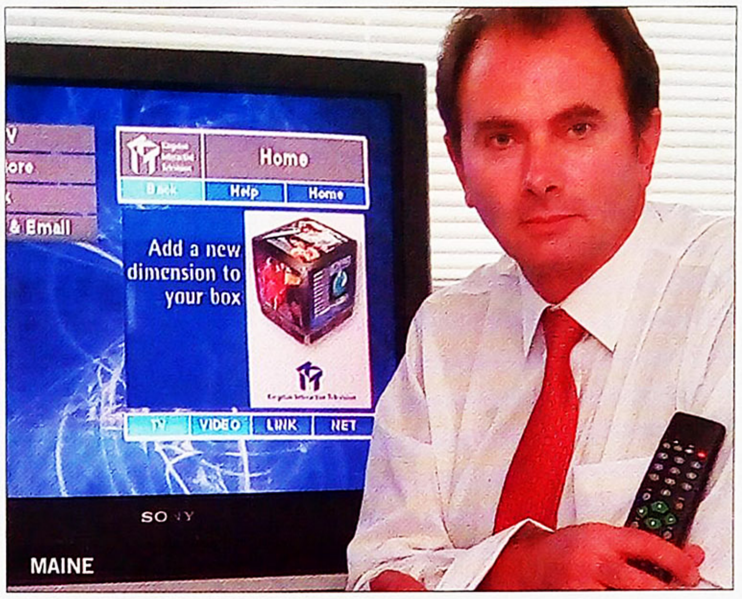
BY CHRIS FORRESTER

Britain's Kingston Communications plc last month was admitted to one of the country's most prestigious clubs: the all-important Financial Times/Stock Exchange (FTSE) 100 index. The entry was all the more significant because Kingston only went public last July, and previous to that was wholly owned by the city of Hull, an old fishing port on England's northeast coast.

The initial public offering raised about $US240 million — valuing the company at $US1.2 billion — and saw about 60,000 local citizens snap up about 8 percent of Kingston's stock under preset allocations. Success was is the air from the get go, with shares leaping 30 percent on Kingston's first day of trading, and continuing to steadily rise as investors realized what a little gold mine Kingston is sitting on. The company's asynchronous digital subscriber line rollout, its expansion into business telephony (marketed under the "Torch" brand name) and satellite services, and the deployment of pay-per-view and video-on-demand services all helped fuel the stampede for shares.

Today, Kingston is valued at about $US8.5 billion. And the good citizens of Hull — which officially is called Kingston-on-Hull — are enjoying the benefits of the windfall. The city council, which still owns 45 percent of the company, is promising to refurbish all its schools, spend $US16 million on new street lighting and $US60 million on a new stadium for its local sports teams. Indeed, Hull was recently described as the U.K.'s wealthiest local authority.

Hull has been given this status because of an old, and odd, twist. Back in 1902, the Hull municipality took on a license for what was seen by many as a suspicious new invention — the telephone — and promptly introduced the breathtaking concept (then and now) of offering unlimited local calls for an annual fixed fee of £6.10 ($US10.50). While plenty of other towns did the same, one by one — and generally years ago — they fell for the charms of the old state-owned Post Office national system. When British Telecommunications plc was created, Hull was the only remaining municipal-owned phone service. But, unlike the rest of the U.K.,



MAINE

Hull was comfortable with providing its own telephony, and consequently enjoyed higher household phone penetration and usage per person.

Kingston's flat-rate pricing policy is still in place for its 51,000 residential lines, although the subscriber fees have risen a tad since 1902. Of that base number, some 44,000 homes also took part in the offer to pick up shares of Kingston Communications, with an average $US1,600 investment now worth more than $US11,000, putting smiles on a lot of townsfolk's faces.

Among them is Kingston CEO Steve Maine, who was brought in from British Telecom to head Kingston's transformation, which has included moving into broadband services. Maine oversaw a 12 percent increase in profits in the first three quarters of 1999, the most recent data available. That compares with average profit growth among European telcos of 4 percent. That expansion has come in Yorkshire, which is adjacent to Hull's core subscriber base, where Kingston is hitting a 44 percent penetration rate among homes passed by its broadband services.

Since launch, Maine has also pushed the expansion of the group's Torch-branded business network to regions outside Hull, including the huge East Midlands conurbation of Nottingham/Derby and Leicester, the affluent South Midlands centered on Milton Keynes (a London suburb) and the southwest portion of England.

Investment bank ABN Amro N.V., which makes a market in Kingston's stock, says revenues from Torch rose 68.7 percent last year to $US75 million, with a near-doubling of both route miles and lines connected. (The company finished the third quarter with 37,791 lines.) At the time of the IPO, Maine said he planned to build one Torch-type business

Continued on Page 38

Around The World

■ EUROPE

Unisphere Solutions, a Siemens A.G. unit that provides converged networking solutions for Internet-service providers and carriers, won a multimillion dollar deal to provide its Edge Routing Switch (ERX) to Portugal Telecom S.A. Marking Unisphere's largest single sale of its ERX to date, the deal with Portugal Telecom will usher in the first integration of a digitalized broadband Internet-protocol (IP) network in the country, Unisphere said.

By using Unisphere's IP switches and software, Portugal Telecom later this year plans to offer its customers a roster of next-generation services such as IP virtual-private networks, broadband-Internet access, multimedia streaming, service-level agreements (SLA) and quality of service guarantees. As the largest telecommunications company in the country, Portugal Telecom provides cable television, cellular telephony, paging, data and broadcasting services.

Priority Wireless, the wireless-communications division of United Pan-Europe Communications N.V. (UPC), has won two national licenses to build and operate broadband fixed-wireless access networks in the 3.5 GHz band in Spain and Switzerland, allowing Priority to compete with incumbent carriers. Priority Wireless' licenses will serve as a cornerstone for offering an alternative broadband platform for the delivery of UPC's telephony and Internet products, the company said. UPC already operates an IP network in Spain, and has proposed a $US2.8 billion purchase of SBS Broadcasting S.A., which owns television channels and radio stations in 10 countries, including Switzerland.

■ MIDDLE EAST

Elbit Ltd., an Israeli interactive-television developer, said it will sell its 57 percent stake in two-year-old Internet-over-TV provider Peach Networks Inc. to Microsoft Corp. for an undisclosed sum, giving the software giant a thin-client solution for its interactive-television platform. With Peach in the fold, Microsoft said it expects to offer a number of applications and services such as e-mail, Internet access and online shopping via the current generation of digital set-top boxes.

■ NORTH AMERICA

Shaw Communications Inc. has earmarked $US30 million to build a fiber optic network linking British Columbia, Interior Prince George, Cariboo, Kamloops, Okanagan and Kootenays as an element of the company's $US100 million network capital investment plan, which was announced last fall. When construction is completed, those regional networks will be connected to Shaw's Western Canadian backbone grid, which will span communities from Vancouver Island, the Lower Mainland through to Winnipeg, and provide residents there the ability to sign up for the Shaw@Home cable-modem service. Shaw provides services to roughly 1.8 million customers.

■ LATIN AMERICA

VeloCom Inc., an international broadband-communications company based in Denver, Colo., said its Argentine subsidiary has launched high-speed Internet and data transmission services in Buenos Aires, based on new point-to-multipoint wireless technology from Lucent Technologies Inc. The company expects to expand its presence later this year to the Argentine cities of La Plata, Córdoba and Rosario. VeloCom's premium-tiered service runs at data speeds up to 1.5 megabits per second for residential and small- to mid-sized business users, the company said.

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Kingston

Continued from Page 36

a year. "Now I am more confident that we can build these at a faster rate," he said recently.

Step one of the accelerated expansion was a February follow-on stock offering that rose $US160 million, the bulk of which will be used for Torch investment.

At the time, Maine said he wanted to get Torch services into "at least three regions by March 2001." Soon afterward came a deal with British Sky Broadcasting Group plc that saw BSkyB agree to transmit all of its programming over Kingston's emerging ADSL system, Kingston Interactive Television (KIT). As part of the deal, BSkyB now holds 40 percent of KIT.

Besides Sky, Kingston is working with other pay-per-view and near-VOD suppliers, as well as with other content suppliers, including digital-terrestrial service ONdigital, Viacom Inc., Turner Broadcasting System Inc. and Flextech plc.

It's also working Elmdale Media's Yes Television brand of on-demand interactive products.

Kingston's ADSL rollout is modest, targeting fewer than 1,500 homes, but the service has only been "live" since early February, and available from just four telephone exchanges. KIT currently uses Newbridge Networks Inc. hardware with Pace Micro-Technology plc set-top boxes. However, bidding is currently underway on the contract for the next generation set-top boxes in preparation for what KIT spokesman Tony Barker calls a target of "30,000 homes by mid-2001."

There's one big difference between Kingston's ADSL concept and that of rival British Telecom.

Maine's priorities include epanding Kingston's business services.

Kingston's capacity is a whopping 4 megabits, double BT's. Moreover, this delivery technology enables Kingston to offer video services and other features aimed at TV viewers, not just data-centric services designed for PC users.

The company has made advances on other fronts as well. It's satellite-services business, Kingston TLI (which now also includes the recently acquired Teleport London International business), has seen its increased investment generate an encouraging level of new business, both from broadcasters and Internet-service providers. For example, last month it won a monitoring and control contract for New Skies Satellites' 703/803 and 806 birds. It already performs a similar role for Loral Space & Communications Ltd.'s Orion 1 mid-Atlantic craft.

Satellites and cutting-edge ADSL are a long way from a 1902 concept of telephony. The local newspaper is full of anecdotal stories about local residents' newfound fortunes. One subscriber, for example, is planning an around-the-world cruise; still others intend to buy new cars or remodel their homes, hoping to outdo their neighbors.

Kingston, meanwhile, "continues to outperform its peer group of Europe's incumbent telcos," according to ABN Amro analyst Andrew Moffat, indicating the company, too, is good at outdoing its own counterparts.

NewProducts

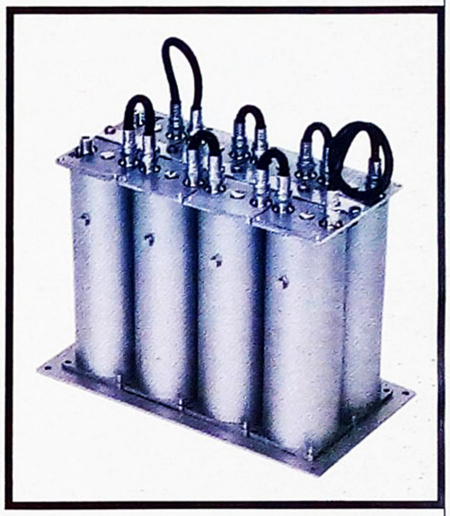
Fiber-termination box

Fiberdyne Labs Inc. has announced its FTP-024 24-Port Fiber Termination Box. The unit is available in single-mode, multi-mode and custom configurations. In addition, optional preconnected multiple fiber cables or pigtails are available for fusion splicing.

Fiberdyne Labs Inc.
127 Business Park Drive
Frankfort, N.Y. 13340 USA
Tel: (1) 315-895-8470
Fax: (1) 315-895-8436
Web site: www.fiberdyne.com

Channel-deletion filters

Microwave Filter Company Inc. has introduced new deletion filters that attenuate the entire channel spectrum from video carrier to aural carrier, to allow reinsertion of new information without interference. The filters will perform continuous intra-channel suppression of 50 dB, which is more than ample attenuation for new channel reinsertion, according to the company. Attenuation drops sharply at channel edges to preserve the upper and lower adjacent channels. The filters are available for single channels and can be incorporated into a filter network for suppressing contiguous and non-contiguous channel groups.



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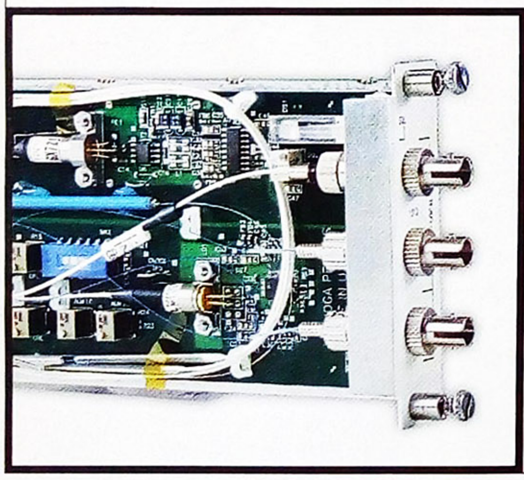
6743 Kinne Street
East Syracuse, N.Y. 13057 USA
Tel: (1) 315-438-4700
Fax: (1) 315-463-1467
Web site: www.microwavefilter.com

Fiber singlers

Canoga Perkins has announced its L650 and 6001 fiber singlers, which enable two 1310 nm devices to communicate bidirectionally over a single fiber, at speeds from T-1 to Gigabit Ethernet. This doubles the capacity of the existing optical cable in place, according to company officials. Offered as stand-alone devices or as a module in the EdgeAccess Universal Chassis System (UCS), the L650 is a fiber optic convertor/transponder module with an integrated wave-division multiplexer (WDM). As a completely passive device, the 6001 single channel WDM optically multiplexes and demultiplexes the signal streams over a single fiber at the remote end.



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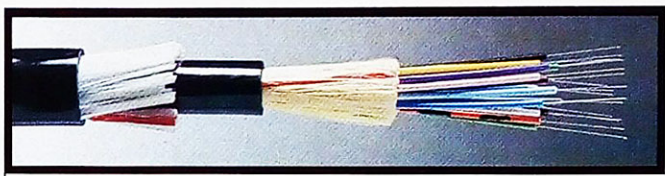

Armored fiber optic cables

Optical Cable Corp. has announced its fiberglass-armored fiber optic cable products. The optional all-dielectric fiberglass yarn armor is available for rodent protection where all-dielectric, lightweight and flexibility are primary requirements for fiber optic cable.The fiberglass layer inside the fiber optic cable provides an effective deterrent to damage caused by small, non-burrowing rodents. The cable is also suited for use where fiber is exposed to subterranean tunnels, ducts and surface installations.

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Roanoke, Va. 24022-1967 USA
Tel: (1) 540-265-0690
Fax: (1) 540-265-0724
Web site: www.occfiber.com

Tunable filter

Trilithic Inc. has introduced the new DCVF5 digitally controlled tunable filter, designed for cable-TV system measurements. Based on the VF5, the new filter uses a microprocessor-controlled mechanical servo operating the tunable filter bank over the 55 MHz to 880 MHz spectrum or pre-programmed channeled steps. Bypass, terminating, external user paths and +20 dB post amplification are configured by an internal switch matrix. T-Channel fixed filters are included. Operation is managed through a front-panel keypad, or software-driven HP-IB control.

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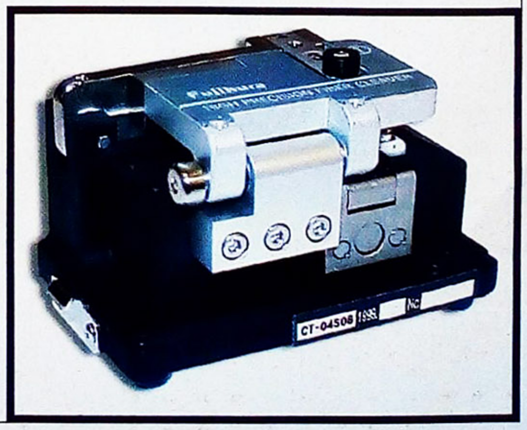
Fiber cleaver

Alcoa Fujikura Ltd.'s Telecommunications Division has introduced its new fiber cleaver (the CT-04B-S8), which has been designed to provide an 8 mm cleave length when used in conjunction with the fiber-holder system of the FSM-30P factory splicer. The use of a standard CT-04B cleaver with the FSM-30P fiber holders results in a 10 mm cleave length, and therefore, a total bare-fiber spliced region of 20 mm. By using the unit, the length of the bare-fiber spliced region is reduced to 16 mm, which allows the use of a shorter 20 mm length micro-splice protection sleeve. The use of the shorter sleeve is helpful for the assembly of high-density optical packages such as Erbium fiber amplifiers, according to the company.



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Telecommunications Division
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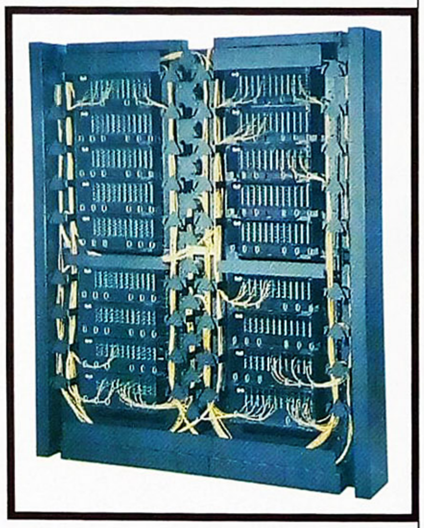
New Products

Frame system

FONS Corp. has expanded its product line to include the LX-4000 high-density open-bay frame system. Suitable for interconnect or cross-connect applications, the system optimizes fiber capacity while providing the tools for proper fiber management and cable protection.The system accommodates up to 44 units of 1.75-inch EIA standard rack space, providing capacity for more than 1,200 terminations in a single bay. In addition, the rack system combines heavy-duty steel construction, a rugged, seven-foot base frame, modular fiber-management spools, front-to-rear access slots and integrated cable-management troughs. End guards on both sides of a multiple-bay system further protect and conceal the cable. For added system flexibility, the base frame is available in two sizes (19 inches and 23 inches wide) to meet specific needs.

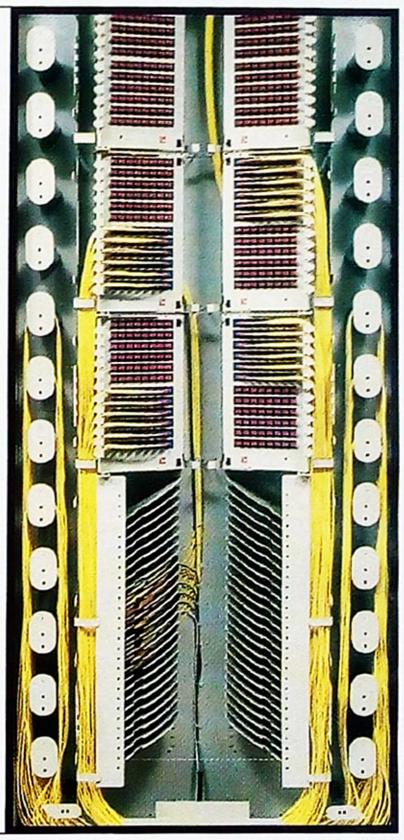


FONS Corp.
71 Lyman Street
Northboro, Mass. 01532 USA
Tel: (1) 508-393-4268
Fax: (1) 508-393-3657
Web site: www.fons.com

Optical-distribution frame

ADC Telecommunications Inc. has introduced its OMX 600 optical distribution frame (ODF), a front-facing, high-density frame designed for protecting, managing and enhancing optical networks. The frame is capable of terminating and splicing up to 576 fibers in a 600 mm x 300 mm footprint.The OMX 600 protects fiber cable and connectors through the use of patented angled retainers and a bend-radius protecting design. A modular solution, it provides flexible configurations for termination, splice and storage applications. The unit can be installed back-to-back or against a wall to save office floor space.

ADC Telecommunications Inc.
12501 Whitewater Drive
Minnetonka, Minn. 55343 USA
Tel: (1) 612-938-8080
Web site: www.adc.com




Cable TV workers build out the company's broadband network.

Hong Kong,

Continued from Page 16

"They can offer telecoms access almost as a byproduct," explains Andy Perkins, head of telecom research at Prudential Securities.

Theoretically, since it was granted a fixed-telecommunications-network services license in January Cable TV has been allowed to offer telephony services in Hong Kong. The company has conducted some telephony trials for quite some time, but is not planning to launch services until 2001.

Stephen Ng, chairman and president of Cable TV's holding company, Wharf Communications, denies that the company is waiting for its business to reach a certain subscriber threshold before it enters the telephony market. "Telephony over cable is using technology different from plain telephone lines. We are waiting for this technology to mature and to become commercially viable," he says.

On the other hand, since telcos have already wired most homes, it is relatively simple for them to upgrade the transmission capabilities to offer high-speed Internet connections, which in turn, enable them to offer an alternative to cable TV. C&W HKT is doing this through a joint venture it set up with Star TV late last year.

There are some concerns that the joint venture could collapse; Li doesn't see eye-to-eye on the project with News Corp. chairman Rupert Murdoch, and relations between the two men have not been the best.

But as it currently stands, the project is leveraging Star TV's program content and pan-Asian satellite coverage, as well as C&W HKT's broadband network. It will include access to a choice of interactive home entertainment, including up to 50 television channels. That comes in addition to HKT's iTV video-on-demand service, the option of broadband-Internet access service, as well as online shopping, electronic-commerce applications and information services — all delivered over the television or personal computer.

According to Perkins, this kind of alliance shows that in order for high-speed Internet services to go mainstream, they really need more content. "Just as in the early days of cable TV, you are now going to see a concerted effort to develop the content side," he says.

Given the importance of content, it's little wonder that Hong Kong's dominant broadcaster — and one of the region's most prolific program suppliers — Television Broadcasts (TVB), is looking for potential partners, albeit slowly. At a ground-breaking ceremony last month to mark the construction of the company's new headquarters, executive chairman Sir Run Run Shaw said the company was keeping an open mind about teaming up with strategic partners for future expansion.

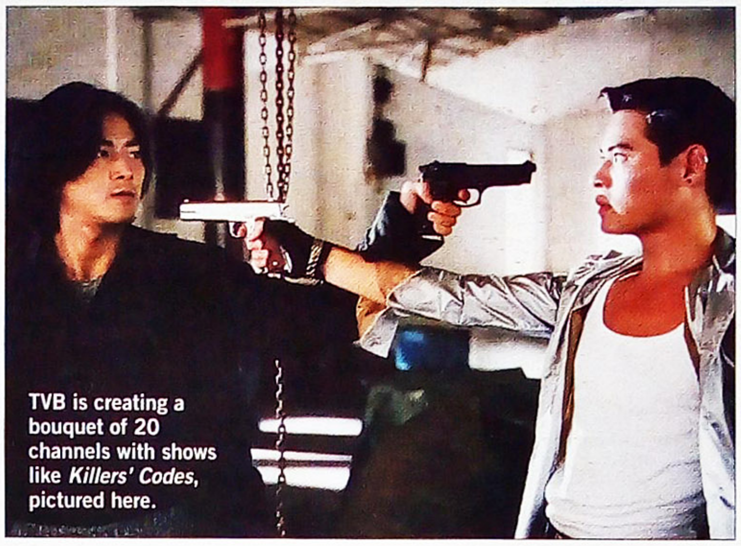
TVB has already announced plans for a digital bouquet of some 20 channels offered to Hong Kong consumers via satellite. Pending a license, which TVB expects the Hong Kong government to grant in June, the direct-to-home service should launch in the first quarter of 2001. Shaw says the company will invest more than $HK1 billion ($US128.5 million) in the service.

While TVB is moving fairly slowly right now, when the hyperactivity of Hong Kong media

and telecoms plays settles down, the company will remain as one of Hong Kong's main players, according to Tulk. He predicts Cable TV and C&W HKT will be the most important firms, followed by TVB and then maybe two or three nascent fixed-wireless operators that have recently been issued licenses to operate broadband services over local multipoint distribution service (LMDS).

Projects like those proposed by Towngas and CLP have a business case, and will probably create some useful new revenue streams, but they have no chance of dominating either the pay TV or the Internet markets, according to Tulk.

"LMDS operators could well shake Cable TV and C&W HKT from the top if they offered prices way below, which they could do by raising revenues in other ways, such as through e-commerce transactions," says Tulk. "That way they would not need to charge for access."



TVB is creating a bouquet of 20 channels with shows like *Killers' Codes*, pictured here.

Among the LMDS operators he refers to is Hong Kong Broadband Network (HKBN), which launched in early March and is currently in the process of building out its broadband infrastructure. It is part of City Telecom (HK) Ltd., one of the largest international-direct-dial operators and Internet-service providers (ISPs) in Hong Kong.

HKBN high-speed Internet access is up to 30 percent less expensive than that of other operators, making broadband access charges hardly higher than standard Internet access. HKBN now has more than 395,000 dial-up users and expects 60 percent of them will switch to broadband. It is committed to covering 70 percent of the total population within three years, serving both residential and corporate customers.

"The reason for setting such an aggressive target for pricing, coverage and installation lead time is because we want to get the maximum market share in the shortest time," says City Telecom chairman Ricky Wong Wai-kay.

Cable TV's answer to City Telecom's aggressive move was to bundle i-Cable, the ISP it launched in February, with its pay TV services and to offer even further price reductions to its cable-television customers who commit to a one-year ISP subscription.

In addition to pricing and coverage, Cable TV and HKBN are competing on the content front. While HKBN plans to offer video streaming and Internet videoconferencing through its iChannels portal, Cable TV's iCable plans to enhance its Internet service with more news and entertainment.

"We already have a lot of video content that we can put on our site in a user-friendly manner," Cable TV external-affairs director Garmen Chan says. Cable TV also locked up major exclusive transmission rights to the upcoming European Football Championship 2000 tournament, as well as for soccer's World Cup in 2002, which it will deliver over both the Internet and cable TV.

It remains to be seen how well Cable TV competes against its LMDS rivals — let alone against C&W HKT, Star and TVB's bouquets. But it is clear that the network of alliances and projects buzzing throughout the SAR right now have made it one of the meccas of new media and telecommunications in the Pacific Rim. ■

PICK THE BRAINS OF THE WORLD'S LEADING AUTHORITIES ON CONVERGENCE AT MEDIACAST 2000

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For further information about the Convergence Clinic or MEDIACAST in general, visit the web site at www.mediacast.co.uk or phone the ticket hotline on +44 (0) 870 7511 522.

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With over a decade of experience in two-way communications, digital television and data broadcasting, EUTELSAT is positioning itself in the vanguard of a new generation of satellite-delivered business-to-business and business-to-consumer services. EUTELSAT has developed solutions for fully interactive services using existing Ku-band capacity in order to satisfy the requirements of users who range from international conglomerates to SOHOs, and is already delivering the first high-speed Internet access solutions to the general public. The coverage and bandwidth options provided by its 15 satellites position EUTELSAT to be a leading supplier of capacity for a new generation of media rich services while its upcoming capacity will open opportunities for further geographic expansion, dynamic bandwidth allocation and increased ease of access.

IP Planet

IP Planet delivers an eBroadcasting solution – with full video resolution, allowing maximum interaction with the video content.

IP Planet will be utilising its satellite network and multidisciplinary talent to deliver an IP end-to end eBroadcasting solution that will host 2 main features:

1. Hi-quality video embedded in your PC's web browser (relative quality = VHS)
2. An interactive layer that will be fully synchronised with the video content.

Sagem is Internet-ready

Convergence is creating new ways for today's digital TV providers to meet the needs of subscribers. Decoders already support electronic programme guides, personal messaging and impulse pay-per-view; the simple addition of a return channel opens the way to a raft of Internet-based facilities that extend and enhance the role of the TV receiver. Sagem's latest 4000 series of digital decoders, whether cable, satellite or terrestrial, offers a comprehensive set of on-line Internet-based facilities.

One click on the remote calls up the 4000 decoder's personalised portal, allowing the user to immediately access a list of favourite web sites, browse the Internet, send or receive email and - thanks to a safe smart card interface - conduct e-commerce transactions.

Return channel options include DVB cable modems and V90/56k analogue, ISDN and, in the near future, ADSL modems.

YES TELEVISION

Yes Television is a global market leader using Internet technology to provide high-quality Video On Demand (VOD) to consumers. Broadband IP networking delivers Yes Television to digital set-top boxes, giving viewers the features of a VCR and access to video content on demand.

The company has content deals with major providers. Top movies are supplied by leading Hollywood studios, viewers can also choose from a wide range of children's programmes, music videos, travel services, sports features and television comedies and dramas.

BLIPS ON THE SCREEN

Rapture,

Continued from Page 8

(MSO) Telewest Communications plc has a 4 percent stake. Rapture's staff, of which the average age is 22, produces 90 percent of the programming, and there's not a rerun in sight.

The gamble appears to be paying off. Rapture's distribution grew more than tenfold last year, rocketing from 650,000 homes to 7 million homes thanks largely to carriage on direct-to-home platform Sky Digital, and on MSOs Cable & Wireless Communications plc, NTL Inc. and Telewest. According to Stanhope, Rapture is now among the U.K.'s top-10 satellite-delivered channels, when ranked by distribution.

Rapture moved from transmitting only two days a week to a full seven-day schedule in February. Stanhope hopes to turn its daily eight-hours of programming into a 24-hour affair later this year, and plans to collaborate with Sky Digital on a pay-per-view clubbing program. Other projects include perfecting Rapture's Web site and producing programming in the letterbox, or wide-screen, format that's more prominent among British TV sets.

John Cresswell, chief operating officer of United News & Media's broadcast division, expects the channel to break even at the end of next year and to begin generating profits by 2002. His company's investment in Rapture was an unusual one, he notes. "It's the first low-level, niche start-up we've done," Cresswell says, adding that the company is now considering investments in two other new channels.

STANHOPE

Cresswell notes that that Stanhope spotted a valuable gap in the market. "No one was making original production to reach [18 to 24-year olds]. Advertisers will pay a huge premium for them, because they don't watch that much TV."

Paul Twivy, a partner in the U.K. communications company Circus Communications, describes Stanhope as "one of the best media strategists I've worked with in my 20 years in advertising. He's one of those rare media planners who has both a very good gut instinct for the consumer, combined with strong analytical skills."

Stanhope's strategy hasn't been picture perfect. His decision to change Rapture's original educational bent to a pure entertainment channel is one sign of that.

"We dropped being dull and worthy, and we went out to have a good time," says Stanhope, "People don't turn on the television to watch what they can learn at school."

According to Stanhope, Rapture is targeted at people from the age at when they start going out all night to when they get married. "Once people get married, they metamorphose into different types of people," says Stanhope.

He may be single, but Stanhope says that at 39, he's much too old to go clubbing. For excitement, the reformed "petrol head," as Twivy describes him, has Rapture to keep him young — and a KTM Duke motorcycle to remind him of the good-old days. ■

Swingewood,
Continued from Page 8

TV penetration in the U.K., at nearly 100 percent, compares with Internet penetration of just 16 percent among British households.

Swingewood is clearly interested in getting more eyeballs for BSkyB than he can over the TV set. "It's not all about competition. There is complementary broadcasting, too," he says. For example, "here's the [Sky News] headline, but the full analysis is on the Net. The ability to go deep into the TV experience is also happening, and it doesn't matter whether its broadband, ADSL, or hard-disc [personal digital-video recorders], the viewers will choose what they want and how deep they want to go."

He notes that during the recent hijacking of an Afghan jetliner to London, "Sky had Web cams [focused] on the plane for days. We couldn't do that all day on Sky News. But on the Web, it streamed continually, generating 1 million page impressions," he says. "There is a place for this niche activity."

BSkyB has earmarked $US400 million for new-media investments. One of its first moves was the purchase of a 14 percent stake in online music retailer AudioStreet.com, which has a subsite called Labrador, to which unknown bands can submit MP3 files of their own music. "You can see how I could start making a program on this week's emerging bands," Swingewood says. "People might ask, 'Why have you bought a CD company?' But look at the access to content, as well as CD-commerce."

Among those asking questions is Morgan Stanley Dean Witter & Co. senior analyst Rebecca Winnington-Ingram. She says BSkyB's Internet strategy is "taking shape," but that she is still unclear "how these new portals will sit alongside Open, particularly in areas such as e-commerce."

Barry Flynn, a U.K.-based digital-TV specialist, confirms that Swingewood "knows this market inside out, from a content point of view as well as a technology one." But while adding that BSkyB makes a "powerful online play," thanks to its digital-subscriber base — which is projected to reach 5 million by June 2001 — Flynn questions whether BSkyB's Web sites have begun to achieve portal status in the U.K.

Swingewood has no such doubts. Indeed, he sees the day fast approaching when users will as automatically turn to SkySports.com as they currently watch the Sky Sports Interactive channel on TV. "This interactive experience, away from television even, might allow us to cover even more sport," he says. "I do not see our SkySports.com just replicating what we do on TV. I want to cover all sports to a degree."

Swingewood says his brief is simple: expand BSkyB across all new platforms, including mobile phones, palmtop computers, the Internet and Open.

He even wants to reverse the normal process and bring Internet experiences to the TV, citing the Web site Africam.com and its dozens of Web cams in the South African bush. "Can you imagine 18 or 20 low-bit-rate video streams out in the bush, all being uplinked in real time over satellite?" he asks. "This is what the Internet is going to allow, and a lot of it will translate to the TV set. In fact, I'd love to have a few experimental channels for crazy ideas like this." ■

BLIPS ON THE SCREEN

Venezuela,
Continued from Page 8

tions will settle the country's ongoing political uncertainty.

But there is nothing uncertain about GloboCable's plans, according to Pereira. "We don't give the slightest thought to not launching," he says, adding that the business will be up and running by the end of the year. The business plan projects 25,000 subscribers in Guarenas in the first three years, and the subsequent development of Guatire to attain a total of 50,000 subscribers.

Pereira believes that these areas are poorly served by cable, though GloboCable's entry will put it in an overbuild duel with Cabletel, one of Venezuela's top three MSOs. Like the country's other two major operators, Intercable and SuperCable, Cabletel has grown its subscriber base in recent years by expanding its territory and acquiring smaller operators.

Cabletel's clout surely underlies the rather dismissive attitude toward the cable upstart evinced by Alberto Arapé, vice president of strategic relations at Cabletel's holding company, Veninfotel. "Those people in Guarenas and Guatire, they aren't ready to start yet. It's a very small operation," says Arapé, who is also president of the Venezuelan Chamber of Subscription TV trade group.

But Mario Seijas, the director of Intercable, is upbeat, saying that "financing shouldn't be a problem," since Ravel's partners in Globovisión include a banker and the wealthy president of the company. Seijas says that while these men are not partners in GloboCable, Ravel is very close to them and can probably count on their financial clout.

Few outside the cable industry know about GloboCable. But they are familiar with Ravel's achievements at Globovisión, which has been lauded for attracting an upper-income demographic and high-end advertisers with its strong reporting and savvy commentary.

Pereira is well known in pay TV circles. At various points in his career, he has been a consultant to Spanish MSO Multicanal and Portuguese operator TV Cabo Portugal S.A. He was also a director and partner in the Colombian MSO Cable Sistemas S.A., and an investor in Latin America Pay TV Service, which produces several movie channels for Latin America.

But why invest in Venezuela, where political upheaval has created economic uncertainty and consolidation in cable-systems business makes things doubly tough for an upstart? One answer is telecommunications deregulation. GlobalCable's launch roughly coincides with the November deadline for the Venezuelan government to dismantle its state-owned telephone monopoly. And cable operators are invited to participate in that industry.

Broadband services form part of GloboCable's plans, according to Pereira. "Cable is a platform for all services: telephony, the Internet, interactive services, teleconferencing, all kinds of entertainment, all in one box," he says. GloboCable has not yet applied for a telephony license, aiming first to first get its cable-TV operation up and running.

Pereira is also keen to do business again in Venezuela, after so many overseas projects. Although a native of Portugal, he was 18 years old when he moved to Venezuela, a country where he was destined to meet his future partner in cable. Working together again, Pereira and Ravel are hoping to rustle up some of that same magic.

But with a whole set of new circumstances governing the industry, there is surely no guarantee of success. ■

E-advertising,

Continued from Page 10

grammer says. However, as Web usage spreads, "I see a lot more regional and panregional buys," says Levy, especially in Latin America where Spanish-language Internet sites are rapidly proliferating.

Tom Winner, media director of ad agency Weiden & Kennedy in New York, believes Latin America may be on the verge of a huge expansion in Internet usage, with an accompanying surge in marketing spending. He points out that the region "is probably where we were a few years ago and, needless to say, some of our [dot-com] clients are very interested."

"There are now a lot of IPOs outside the U.S., and we are starting to see a lot of business creep up."

David Levy, president, international sales and Latin America, Turner Broadcasting System Inc.

In the markets of South Asia and the Far East, "[Star TV] has been pursuing a lot of those dot-com companies," says Christopher Chew, who was until recently vice president of sales, North America, for the Asian programmer. He now holds the same title at China.com. "Everyone recognizes that Asia is a big market and has huge potential, but they are just not ready to go into it yet."

Chew considers Hong Kong and South Korea robust markets since both have relatively high Internet usage. China "is just not there yet," he says, but India is showing strength. Star recently signed country-specific ad deals with several Indian dot-coms. Those that bought spots on Star there were automartindia.com, centraldepository.com, cricket.org and zipahead.com.

"Is there money out there? Yes, there is. But it is going to be more country-focused. It is not going to be [spent] on pan-Asian [campaigns]," Chew concludes.

Weiden & Kennedy's Winner remains unconvinced that the rest of the world will soon approach the level of Internet frenzy seen in the U.S. He notes that while Europe is far ahead of the U.S. in many forms of wireless communications, it remains behind both in use of, and purchases over, the Web.

"Will the U.S. model be copied? Will, within a few years, every commercial pod have a dot-com in it? My sense is that it is just not going to be as all-consuming as it is here," Winner says. He points out that in Europe, at least, people are not yet as "time-starved" as Americans, which somewhat negates the convenience factor of "e-tailing." Also, more practically, fulfillment and delivery systems are nowhere near as advanced.

"There are very few people left in the U.S. who haven't at least attempted to access the Internet," Winner adds. In the rest of the world, the real challenge of buying media for Internet companies both large and small "is that the amount of e-commerce is so small that you have to find not only the people who have actually done it, but people just like them." ■

Broadband Connections

Technology and Equipment Buyer's Guide

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Fax: 1-913-764-0540
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Telephone: 1- 215-538-8729
Fax: 1-215-538-8779
Christine Mascaro
Marketing Manager

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60 Decibel Road
State College, PA 16801 USA
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Fax: 1-814-238-4065
David Eng
SVP, Worldwide Sales

CommScope, Inc.
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Hickory, NC 28603 USA
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Fax: 1-704-323-4989
Frank Logan
Executive Vice President

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Fax: 1-408-953-9299
Buck Gee
VP, Marketing

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Fax: 1-514 374-9370 (Corporate)
info@electrolinequip.com (General inquiries)
support@electrolinequip.com (Technical Support)

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Raleigh, NC 27616
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Mindport
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2130 KA Hoofddorp
Netherlands
Telephone: 31-235-56-2222
Fax: 31-235-56-2324
www.mindport.com

Motorola Broadband Communications Sector
Corporate Headquarters
101 Tournament Drive
Horsham, PA 19044
Telephone: 1-215-323-1000
Toll Free: 1-800-523-6678
Matt Aden
SVP Sales and Support

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Broadband Communications Sector

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Fax: 44-1274-532010
Ian Ward
Director, New Business Development

PACE

PanAmSat
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Fax: 1-203-622-9163
Dan Marcus
VP, Corporate Communications

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Fax: 34-91-584-05-54
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Fax: 1-408-727-6205
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www.terayon.com
John Hamburger
Director, Corporate Communications

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Timothy F. Cohane
President

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Dave Wachob
Vice President & General Manager

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TAKING Stock

BY MIKE GALETTO

TECHNOLOGY

Attractively Interactive

IT'S BEEN ANYTHING BUT the "middle" of the road for NDS Group plc, News Corp.'s unit that develops set-top middleware for interactive services, conditional-access and broadcast-control systems. Shares of the company, which went public last December, have doubled this year, thanks to a hearty investor appetite for technology and a slew of new partnership announcements.

Last month, the company unveiled two deals that take it feet first into two of the most-talked-about emerging pay TV markets.

In one, NDS will team up with Chinese computer maker Legend Computer Systems Ltd. to develop a set-top box that enables reception of digital-broadcast and digital-cable transmissions. NDS will contribute its "Core" set-top operating system, Chinese-language electronic-program guide, a jointly developed conditional-access system and — sometime down the line — its interactive-application software. Legend will manufacture the boxes at its Beijing and Huizhou facilities.

Under the second agreement, Microsoft Corp. will license NDS middleware for its Microsoft TV interactive platform aimed at the current generation of digital set-tops. Brazilian multiple system operator Globo Cabo S.A., of which Microsoft owns 11 percent, says it plans to deploy the Microsoft/NDS platform in its basic and advanced digital set tops. In June or July, Globo Cabo will begin a digital set-top trial using Microsoft TV at one of its systems, says the operator's CEO Moysés Pluciennik.

ACTING UP

NDS weekly share price

While NDS advances into those emerging markets, it has a stable base of advanced-market clients. In its fiscal second-quarter earnings released Jan. 31, the company attributed much of its growth — including a 30 percent jump in revenue and a 27 percent increase in profits — to expansion at direct-to-home platforms British Sky Broadcasting Group plc and DirecTV of the United States.

Sizing Up a Giant

MERGERS

DOZENS OF QUESTIONS AROSE in January, when America Online Inc. and Time Warner Inc. announced their plans to merge. Among the unknowns is how in the world the new breed of media/Internet company should be analyzed.

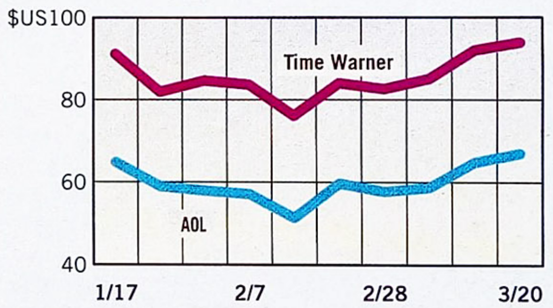
Brokerage firm Merrill Lynch & Co., which has done work for both companies, provided some initial clues with its first report on the giants that, when merged, will be known as AOL Time Warner.

The report, titled *You've Got Upside*, was a collaboration between Merrill Lynch's New York-based media and Internet research teams. And while it's resoundingly positive on the merger — giving both firms "buy" ratings — the report states frankly that analysts "do not believe that an appropriate comparable or valuation methodology for this company exists."

For now, though, the report states, the stock will be worth owning for the company's ability to benefit from "the ongoing impact of the Internet on the global media and communications industries and the development of consumer interactive services." It forecasts a 12- to 18-month price target for AOL of $US90, or a 21 percent premium to its closing price of $US74.375 on March 27.

A SOUND MARRIAGE

Weekly closes



Breaking things down, Merrill Lynch points out that the merger will provide the company with $US1.3 billion in synergies in areas such as marketing and back-office operations, and a competitive position as fields like TV and music are transformed by the Internet. And the company will be able to leverage that position further as new businesses emerge. Despite recent gains, the analysts note that shares of AOL and Time Warner could remain in a trading range as investors continue to dissect the new company. But they also say that new valuation methodologies could be created, and indicate even further growth for the company.

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THE PAY TV PAYOUT

Company	Ticker	Exchange	Close 2/28	Close 3/17	Percent Change	52-Week High	52-Week Low
AsiaSat	SAT	NYSE	$35.81	$44.75	24.96	$45.93	$13.75
AT&T	T	NYSE	$45.00	$53.19	18.19	$63.00	$41.50
British Telecom	BTY	NYSE	$182.75	$193.25	5.75	$245.00	$143.00
BSkyB	BSY	NYSE	$151.31	$170.00	12.35	$201.93	$50.87
Broadcom	BRCM	Nasdaq	$191.00	$217.56	13.91	$249.81	$23.12
Cablevision Syst.	CVC	NYSE	$65.56	$63.00	-3.91	$91.87	$55.00
Cable & Wireless	CWZ	NYSE	$88.75	$92.56	4.30	$95.75	$44.50
C&W HKT	0008	Hong Kong	$3.33	$2.83	-15.22	NA	NA
Canal Plus	CNLP	Paris	$269.80	$263.30	-2.41	NA	NA
Com21	CMTO	Nasdaq	$63.44	$54.44	-14.19	$84.00	$10.37
Deutsche Telekom	DT	NYSE	$87.81	$84.00	-4.34	$100.25	$36.01
Excite@Home	ATHM	Nasdaq	$34.00	$28.50	-16.18	$99.00	$26.75
Flextech	FLXT	London	$25.71	$26.95	4.84	NA	NA

Company	Ticker	Exchange	Close 2/28	Close 3/17	Percent Change	52-Week High	52-Week Low
Globo Cabo	GLCBY	Nasdaq	$21.50	$20.50	-4.65	$25.00	$1.00
MIH	MIHL	Nasdaq	$78.00	$84.00	7.69	NA	NA
News Corp.	NWS	NYSE	$55.13	$60.13	9.07	$67.00	$26.31
NTL	NTLI	Nasdaq	$92.50	107.06	15.74	$109.68	$43.60
PanAmSat	SPOT	Nasdaq	$44.00	$53.63	21.88	$74.25	$26.37
Rogers Comm.	RG	NYSE	$33.13	$30.31	-8.49	$42.25	$15.18
Scientific-Atlanta	SFA	NYSE	$104.13	$129.81	24.67	$154.00	$24.50
Shaw Comm.	SJR	NYSE	$26.63	$26.19	-1.64	$29.00	$13.15
Telefónica	TEF	NYSE	$86.88	$79.13	-8.92	$94.93	$40.36
Televisa	TV	NYSE	$76.06	$73.94	-2.79	$87.00	$26.93
Telewest	TWSTY	Nasdaq	$71.25	$66.00	-7.37	$81.87	$33.87
UnitedGlobalCom	UCOMA	Nasdaq	$98.25	$94.63	-3.69	$114.62	$16.00
UPC	UPCOY	Nasdaq	$63.00	$72.33	14.81	$79.45	$10.37

SOURCE: CNET Investor

ONE ON ONE

Paramount's Bodyguard

JANET STILSON SPEAKS WITH JACK WATERMAN

Among the Hollywood movie studio executives overseeing international television opportunities, it is hard to find a person quite as opinionated as Jack Waterman. Some of that has to do with his personality, but another part has to do with his role as not only an executive responsible for selling international pay TV rights, but as a bodyguard for Paramount's programming in problematic new terrains. He safeguards the company's interests in markets where there's a predilection for signal piracy, and serves as a protector when it comes to new modes of delivery and windows of distribution like the Internet and video-on-demand (VOD).

Over the years, Waterman has helped create 14 movie channels in conjunction with some of Hollywood's other studios, as well as general-entertainment, advertiser-supported channels in the United Kingdom, Spain and Australia.

On the eve of one of the programming industry's annual powwows, MIP-TV in Cannes, France, Waterman supplies his perspective on the danger zones and opportunities for his division. An edited transcript of his conversation follows.

STILSON: How many more channels do you expect to launch in the next few years?

WATERMAN: I think you'll see more channels in the U.K., because I think in the next eight to 10 months, it will be the last great opportunity to get broad distribution in an economic way. I think you'll see some action there. I think France, in the next 12 months. I think Brazil when its economy straightens out, which hopefully will occur in the next year.

I would suspect that our portfolio when you and I talk in three or four years would have six or seven advertiser-supported channels and 16 or 17 movie channels pretty much covering eyeballs in every part of the world outside of the U.S. and Canada.

STILSON: At recent markets, such as NATPE in January, it seems like conversations with distributors have increasingly involved Internet rights. Is that true for you?

WATERMAN: The Internet is something that's been rolling around town here for about a year. It's been much more aggressive over the last six months. But let's talk about the Internet for a moment. I don't think anyone in this business will tell you that the Internet won't be a significant form of distribution. It's going to be.

But that's exactly what it is — an alternative form of distribution. It's not going to change the business. It's not going to change anything. It's another way to distribute a project. But what studios are going to do, within the traditional windowing, the traditional forms of distribution we know, is figure out how to utilize the Internet in a safe, reliable and predictable fashion.

Despite all the conversations that are going on, the studios are not agreeing to put their product on the Internet, because it is not yet safe. And that's something the studios are working on — safeguarding the product in a way that's updateable and upgradeable. As soon as we're all convinced the Internet is safe and our product on the Internet isn't just a way to have everyone pirate it, then we will address the issue of how to use it as another form of distribution.

STILSON: So what you're saying is the Internet should be thought of as a new mode of signal distribution, and not a separate distribution window?

WATERMAN: We'll look at the Internet as not having its own [distribution] window. It's just another way for [channels] to market their services. Anything that can be done now on terrestrial, cable, whatever, can be done over the Internet, in a slightly different fashion. We're not looking at the Internet as a new market. We're looking at the Internet as a distribution form that the existing markets will take advantage of.

STILSON: But presumably when the security issue is resolved, channels will pay a premium for the ability to distribute programming on the Internet. And there's another issue to contend with as well: The Internet is a global animal. Channels buy rights to specific countries or regions, but the Internet goes everywhere. How do you deal with that?

WATERMAN: That's one of the things that hasn't been resolved yet. And one of the ways it may get resolved is through asset-management devices. The Web, while it is universal, does have separate ports of entry among some geographic regions. And when you go into the Internet in the U.K. for a local dot-com company, or you come in [the U.S.], you're coming into different portals.

The asset-management devices may, in fact, identify where a user is coming from. And you may be able to control it that way. And if not, we will come up with something else — such as they did with DVD with the regional coding, which has had mixed success, but the notion is still the same. Our objective is, we have windows that are regional that we want to protect and secure. And we're not going to jump ahead into a new business until we are sure that it is secure.

STILSON: How has the melding of CBS Corp. and Paramount's corporate parent, Viacom Inc., affected you and your division?

WATERMAN: We have not yet integrated the companies' operations, so we haven't seen the impact of it. I haven't had a single meeting [on the subject].

JACK WATERMAN

TITLE:
President, Worldwide Pay Television, Paramount Pictures Television Group

BACKGROUND:
After serving as a financial analyst for the TV station group at NBC, Waterman joined Paramount in 1983. He held a succession of positions within the company, culminating in that of executive vice president of business affairs and finance, video and motion picture marketing, before attaining his current post in July 1994.

STATISTICS:
41 years old, married with two children, resides in the Los Angeles area.

STILSON: How big a business is VOD?

WATERMAN: I think VOD is going to be very large and very significant. I wouldn't be able to put a number on it now. I can tell you [Paul Kagan Associates Inc.] is putting ridiculous numbers on it. But we think it's going to be a very big business.

I think it's going to be bigger in the United States than internationally for the foreseeable future, because pay-per-view is a much bigger business here than internationally right now. Pay-per-view was only introduced internationally in the last 18 months. And more specifically, in the last eight to 12 months, it was introduced with the launching of the digital platforms. We only get pay-per-view revenue in places like Japan, England, Spain to a lesser degree, and Germany — in major countries where the major digital platforms have launched.

Internationally it's going to take a bit more time for it to be a factor, in part because consumers are going to need to be educated. Until the consumer is given a proposition that's compelling enough, I don't really think that it's going to take off. It's going to happen eventually, in a couple of years. And hopefully it will be done then in a thoughtful and creative way, because we're not going to create a business, which has its own set of economics, if we're trying to just replicate pay-per-view.

STILSON: Do you think MIP will be as well attended a few years from now as it is today? Will it be as important to distributors, given the ability of TV buyers to shop for programming over the Internet?

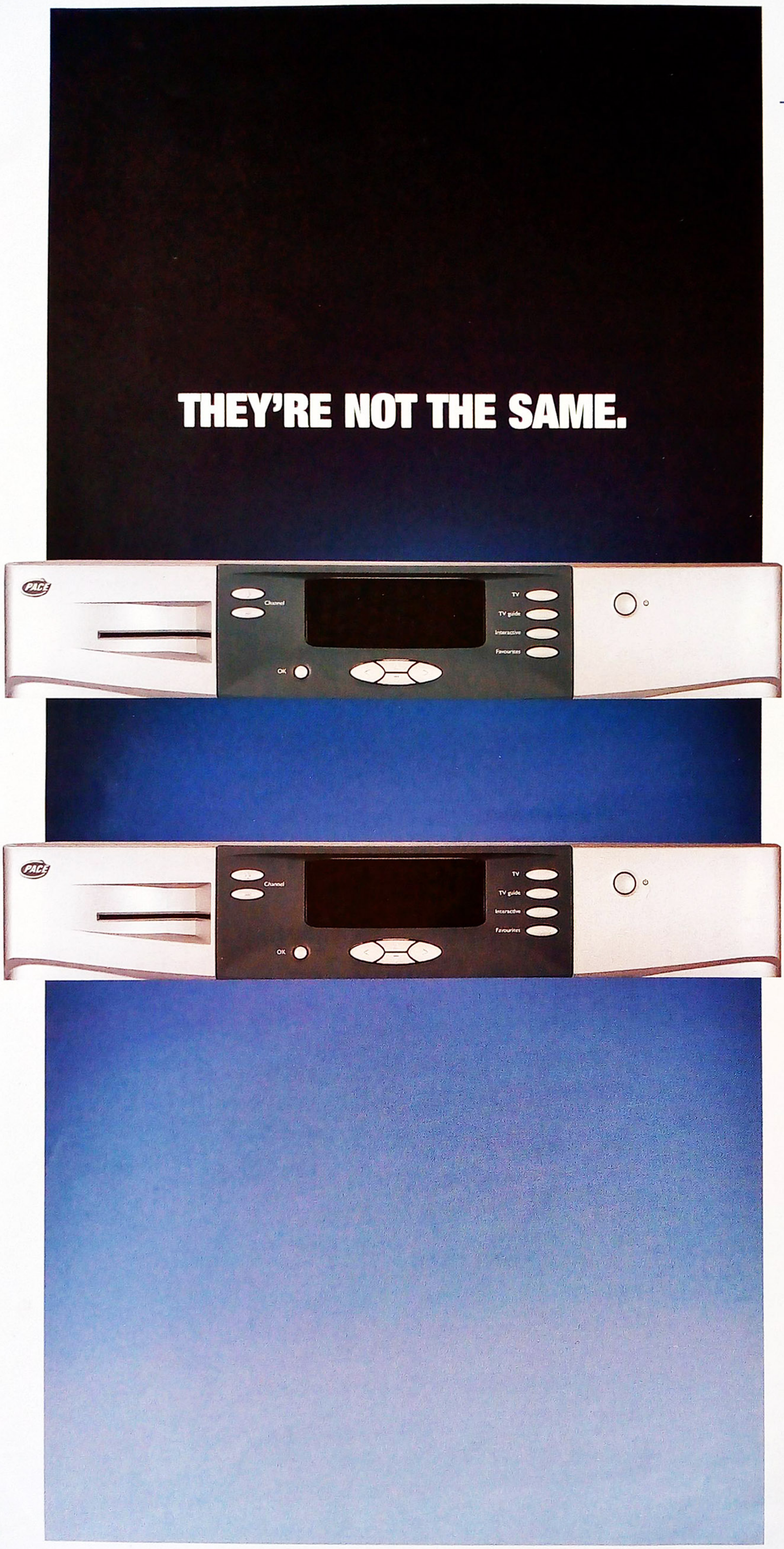
WATERMAN: I think that MIP and MIPCOM are terrific opportunities for the studios to see a lot of customers in a very short period of time. I think it serves a real need. While you always hear it's expensive, I don't see it changing dramatically.

I remember one year we were locked in a room with the Brazilians for six days. And the next year, we were locked in a room talking about Latin America. A year after that we were locked in a room talking to the French.

I would say what you're starting to see now is that some of the deals we did five or six years ago are starting to expire. I think the next two or three years will see us do a lot of renewal deals.

Three years from there, once this new technology [kicks in], we'll start talking about VOD and the Internet.

I think for that for the next eight years you can see the cycles MIP will go through. And after that, I don't claim to be smart enough to really know. ■



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